

State of Connecticut

**REPORT**  
OF THE  
**STATE BOARD**  
OF  
**FISHERIES AND GAME**

For the Fiscal Years July, 1 1930 to June 30, 1932



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State of Connecticut  
PUBLIC DOCUMENT No. 19

**NINETEENTH BIENNIAL REPORT**

OF THE

**STATE BOARD**

OF

**FISHERIES AND GAME**

FOR THE FISCAL YEAR

**Ended June 30, 1932**

TO

**HIS EXCELLENCY, THE GOVERNOR**

HARTFORD  
PUBLISHED BY THE STATE  
1932

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SEVENTEENTH BIENNIAL REPORT

OF THE

STATE BOARD

PUBLICATION

APPROVED BY

THE BOARD OF CONTROL

FOR THE FISCAL YEAR

ENDED JUNE 30, 1935

HIS EXCELLENCY THE GOVERNOR

THE S. Z. FIELD COMPANY  
44 CROWN ST.  
NEW HAVEN, CONN.

**COMMISSIONERS**

**THOMAS H. BECK, Wilton, *Chairman***

**CHARLES F. GRIFFIN, Bloomfield**

**WILLIAM A. TRUE, West Hartford**

TO HIS EXCELLENCY, WILBUR L. CROSS,  
*Governor of Connecticut,*  
*Executive Chambers,*  
*Hartford, Conn.*

SIR:

We, the undersigned Commissioners of the State Board of Fisheries and Game, transmit to you herewith our biennial report for the two years ending June 30, 1932.

In keeping with the spirit of the times, the report is a concise and non-technical document covering all activities of the Department.

Much detailed and relatively unimportant data has been omitted in the interest of economy. All such data is on file at the Board offices, and accessible to any interested citizen.

The report was prepared by the Chairman with the help and cooperation of the Division Chiefs, particularly Miss Mildred K. Bartle, our very able and well-informed Executive Secretary. This procedure was made necessary by the passing of our late lamented Superintendent, John W. Titcomb, during the biennium.

Respectfully yours,

THOS. H. BECK, *Chairman,*  
W. A. TRUE,  
C. F. GRIFFIN.

## REPORT OF THE BIENNIUM

JULY 1, 1930, TO JUNE 30, 1932

In the interest of brevity and economy, and in order that "he who runs may read", we have omitted from this report much statistical matter of relatively minor importance that is on file in the office of the Board and available to any one who may make inquiry.

Subjects of primary interest are listed under sub-headings to further facilitate ready reference.

### ORGANIZATION

The Commission consists of three members who serve without pay and meet once a month in conference with the Superintendent, who, as chief executive officer of the Board, has general supervision of the restoration of fish and game.

During the past biennium, two changes have been made in the personnel of the Board. On the resignation of Mr. Karl C. Kulle in December of 1930, Mr. Charles F. Griffin of Bloomfield was appointed by Governor Trumbull to fill out his unexpired term. On the retirement of Mr. Charles E. Wheeler in June of 1931, Mr. Thomas H. Beck of Wilton was appointed to the Board by Governor Cross and was made Chairman.

On April 1, 1932, Mr. Arthur L. Clark was employed by the Board as Superintendent to fill the place left vacant by the death of the late John W. Titcomb. Mr. Clark, Game Restoration Editor of the *National Sportsman Magazine*, was highly recommended for the post by such well-known conservationists as Seth Gordon, President of the American Game Association, Dr. John C. Phillips, President of the Massachusetts Fish and Game Association and an outstanding authority on game birds, Dr. A. A. Allen of Cornell University, and many others.

Shortly after his appointment as Superintendent, Mr. Clark, with the approval of the Board, organized the department into five divisions as follows:

Division of Administration—Executive Secretary,  
Mildred K. Bartle.

Division of Fish Restoration—Chief, Eben W. Cobb.

Division of Game Restoration—Chief, Arthur L.  
Clark (Temporary).

Division of Law Enforcement—Chief, A. Joseph Williamson.

Division of Land and Water Acquisition—Chief, Homer H. Judd.

It is the function of the Superintendent to see that the policies adopted by the Board are carried out and to correlate the work of the five divisions.

### THE SIX YEAR PROGRAM

In order not only to maintain Connecticut's leadership in fish and game restoration and conservation but to insure further progress along predetermined and definite lines, the present Chairman of this Board, Thomas H. Beck of Wilton, in a report to Governor Cross, proposed a Six Year Program, outlining a constructive plan for future development.

The words "Propagate, Feed and Protect" summarize this plan but for the benefit of those who may not have read the report, the fourteen items of the proposed program are here listed:

1. Improve and increase the contacts and cooperation between the Board and the sportsmen, farmers and game breeders of the State.
2. Provide for an adequate educational campaign on real conservation among school children.
3. Institute a game breeding and management course at the State Agricultural College at Storrs.
4. Increase the staff of wardens.
5. Provide systematic predator control.
6. Promote winter feeding by farmers.
7. Buy and release more birds (pheasants and quail).
8. Hasten stream and pond pollution control.
9. Employ expert game bird man.
10. Broaden the power of the Board to regulate seasons, etc.
11. Encourage farmers to provide shooting.
12. Continue leasing of land and water on a larger scale.
13. Provide more money by a higher license fee or a shell tax.
14. Provide and carry on extensive publicity to enlighten citizens concerning conservation.

Several of these items have already been approved by the Board and are now in operation:

**Item 1. Contacts and Cooperation.**

To this end the Board appointed a Council of sixteen representative and distinguished citizens (two from each county) and these gentlemen are serving the State and sportsmen with great intelligence and zeal. Moreover, they are of great help to the Board in its work.

The Council, which meets each month, is made up of the following members, who serve without any compensation whatever:

C. D. Lanier, <i>President</i> . . . . .	Fairfield County
F. H. Billard, <i>Vice-President</i> . . . . .	New Haven County
Karl C. Kulle . . . . .	Hartford County
John P. Leonard . . . . .	Hartford County
Ray E. Benson . . . . .	New Haven County
James G. Hammond . . . . .	New London County
Willis Austin . . . . .	New London County
Charles E. Wheeler . . . . .	Fairfield County
L. S. Ingalls . . . . .	Windham County
J. Otis Fox . . . . .	Windham County
W. Blanchard Rand . . . . .	Litchfield County
Frank N. Wilcox . . . . .	Litchfield County
E. S. Lord . . . . .	Middlesex County
J. Frederick Scholes . . . . .	Middlesex County
Lebbeus Bissell . . . . .	Tolland County
Raymond I. Longley . . . . .	Tolland County

The Chairman during his first year in office made twenty-six talks before Fish and Game Associations and Clubs with a view to facilitating a greater interchange of ideas, and to better inform the sportsmen concerning the work and plans of the Board.

Commissioners Griffin and True also appeared frequently before sportsmen's organizations, and Superintendent Clark has made a number of talks before various interested organizations, particular attention having been given to informing game breeders with regard to our plans and requirements for better game birds. Copies of the Six Year Program have been widely distributed, two printings of five thousand each being made, most of which have been given to those interested.

**Item 7. Release of Birds.**

The purchase and release of birds has been increased to the limit of our resources.

**Item 9. Field Inspector.**

We have appointed as Field Inspector Mr. Edward G. Wraight, who will supervise the inspection, purchase and release of upland birds, as well as their feeding and propagation in the wild.

Mr. Philip Barney, who has volunteered his services, is devoting his time to our program for waterfowl.

**Item 14. Publicity.**

Mr. Ray Benson, a trained newspaper man, was employed at a nominal salary to devote two days a month to news releases and bulletins. His work has been extraordinarily effective with the result that citizens are much better informed concerning our problems and progress than ever before.

The following items require legislative action:

**Item 2. Educational Program.**

Educational work, because of lack of funds, has been confined the past two years to the showing of films depicting bird, fish and animal life and to the use of cases of mounted specimens of birds and mammals supplemented by bulletin machines with cards describing the different species.

In order to expand our educational work an appropriation for \$10,000 has been requested in our budget estimate for the years 1933-1935. The importance of this work cannot be overestimated. There are probably few conservation departments in the country that have so little educational material to offer as this Board. There is an increasing demand on the part of school children, teachers, and others interested in conservation work for educational literature. The children of our State should be instructed in the fundamentals of conservation and restoration in order to instill in them proper understanding of wild life, and to ensure its preservation for future generations.

If money is appropriated for this purpose, it is proposed to employ two lecturers and to publish booklets (with color plates) describing the song and insectivorous birds of Connecticut, the game birds, the trout and other fresh water fishes, and the predators, all for free distribution in schools and to citizens generally.

**Item 3. Game Breeding Course.**

It is hoped that the Trustees and Faculty of the Connecticut Agricultural College will request an appropriation for the insti-

tution of a course in game bird breeding and management. The institution of such a course would be a very important contribution to the work of conservation in Connecticut, and of inestimable value to farmers and game breeders in the State.

**Item 4. Increase in Staff of Wardens.**

The increase in the warden force by the appointment of not more than two hundred special deputies at one dollar per year will also require legislative action. This enlargement of the force would incur very little additional expense and is in line with the policy of the Board to provide even greater protection to the wild life resources of the State.

**Item 10. Discretionary Power for Board.**

The request that the Board be given broader discretionary powers in the regulation of seasons and in making such regulations as have to do with the conservation of the wild life resources of the State, is important to the interests of the sportsmen as well as fish and game. Requests were made during the last year that the Board extend the ice-fishing season, the trout season and the shad season. Weather conditions which retard the seasons often warrant an extension of them, but since they are definitely established by law, the Board is, at present, powerless to act in such matters.

**Item 12. Acquisition of Lands and Waters.**

Legislative approval is requested in the form of an application for additional funds for continuing the "Connecticut Plan" of leasing land and water for public shooting and fishing, and of renewing leases on land now under lease. As its acreage increases and the expirations of leases increase, it is obvious that additional funds are required. A special appropriation of \$10,000 has been requested for the acquisition of rights of way to lakes and ponds in order to ensure for all time access to such waters for the public.

**Item 13. Increase in Revenue.**

While it is the desire of the Board to increase annually the supply of fish and game for stocking the streams and coverts of the State, it cannot continue to do so on its present financial basis. In fact, it has been necessary to reduce our budget allotments for this purpose for the years 1933-1935, due to a falling-off of receipts during the last two years.

The burden of financing the work, so far as providing better sport in fishing and hunting is concerned, will have to and should be borne by those who enjoy the privilege of fishing and hunting, which after all is our cheapest form of sport and recreation.

It is estimated that the average sportsman spends about twenty times as much on his equipment and on fishing and hunting as he does on fish and game restoration. There must be an adjustment of this ratio, if we are to have better hunting and angling.

If the sportsmen of Connecticut want more fish and game, if they want the State of Connecticut, not only to maintain its leadership in the field of conservation, but to forge ahead, they will have to contribute more money for the restoration of fish and game. The case rests with them!

#### Item 5. **Licensing of Cats.**

The Legislature will be asked to pass a law requiring all domestic cats to be licensed and tagged. The purpose of this legislation is to give the domestic house cat protection. All cats not so licensed will be regarded as stray cats, which are generally conceded to be the most destructive predators of game and song birds.

If the bill fails to pass, we shall have to practice cat control without knowing fireside cats from strays.

According to figures published by the International Cat Society, there are one hundred and twenty million cats in the United States, sixty-five per cent of which are strays. The great naturalist, Burroughs, estimated that each cat in our land destroyed annually fifty birds. If this estimate is correct, there are killed by cats every year approximately six billion birds.

The following items of the Six Year Program do not require legislative action and will, therefore, be put into operation in the near future.

#### Item 5. **Predators.**

The lack of systematic predator control is the weakest spot in our program. Therefore, a determined planned effort will be made to control predators throughout the State, with a view to restoring some semblance of a natural balance by reducing the numbers of black snakes, water snakes, snapping turtles, great horned owls, crows, certain species of hawks, gray fox, weasels,

red squirrels, and such other predators as are abundant enough to constitute a menace to wild life.

Contests among game clubs and individual sportsmen, particularly of the younger generation, will be encouraged by offering prizes to the club or individual catching the largest numbers of certain predatory species.

The Governor will be requested to issue annually a proclamation naming one week as "Protect *Our* Birds Week" and urging all residents of rural communities to participate in a campaign to reduce the number of predatory species on their own land.

A start has already been made in more systematic predator control by wardens and others.

#### Item 6. **Winter Feeding of Birds.**

Systematic winter feeding of birds will be encouraged by requesting farmers to plant and leave standing through the winter patches of suitable grains and to leave corners or strips of brush for cover.

The Board will create demonstration areas in the State Forests and Parks.

#### Item 9. **Game Birds.**

By establishing standards for sanitary equipment and methods of breeding and by standardizing the type of pheasants and quail which the Board will accept from Connecticut breeders, it is hoped that the Board will be able to obtain for liberation birds of more sporting qualities and better adapted to our local conditions than those that have been liberated in the past.

#### Item 11. **Encouragement of Farmers to Provide Better Shooting.**

While the plan to acquire shooting grounds for the public by leasing lands for this purpose has been most successful, there is a limit to the amount of such land which we are justified in acquiring by lease, because of the high cost of acquisition and maintenance under the present plan.

One ideal demonstration area having been acquired in all but two of the counties of the State, it is therefore proposed to extend the plan in a less expensive way. The greatest need of rural landowners is for protection from abuse which inevitably comes from the lawless element in the free and unrestricted use of private property for recreational purposes.

The trespass laws which were passed to prevent such abuse are difficult to enforce and are not well observed.

The Board therefore will suggest a plan whereby landowners in return for their cooperation in permitting State stocking and control of such lands by the State for regulated shooting, will be given protection through State posters, State regulations and State patrol service.

### DIVISION OF ADMINISTRATION

Sportsmen are so much more interested in the activities of the divisions which are directly responsible for greater production of fish and game that they are apt to overlook the importance of the Division of Administration.

It is the business of this division of the department to see that the wheels of the whole machinery are properly greased so that it will run smoothly.

For the enlightenment of those who still believe that any government job is more or less of a sinecure and for the benefit of those who may really wish to know what can occupy the time of seven clerical assistants, a brief review of the activities is deemed appropriate.

It is the function of the Executive Secretary to supervise all office work, to be familiar with all incoming and outgoing correspondence, to prepare budgets for the approval of the Board, to watch expenditures and see that they do not exceed budget allotments, to see that all correspondence is properly indexed and filed, to so plan the work of the office that clerical assistance will be available, when needed, for any division head, to keep in touch with the work of other State Fish and Game Departments through the medium of publications and to present any new ideas gained therefrom for the consideration of the Superintendent and of the Board, to see that the public is at all times promptly and courteously served, to act as assistant to the Superintendent and as Secretary to the Board and the Advisory Council.

To assist in carrying out these duties, an office staff of seven intelligent and hard-working clerks is employed. Their loyalty and cooperation is most unusual and greatly appreciated.

During the course of a year, the office issues over ten thousand licenses and permits, including commercial fishing licenses, game breeders' licenses, dog training permits and permits for minors to fish in leased waters.

In addition approximately sixty thousand stubs of hunting and angling licenses issued by Town Clerks are checked with the reports submitted by them to see that all licenses are accounted for and all payments made to the Treasurer's office. From the stubs of the hunting licenses issued, an annual game census is compiled.

It is estimated that fifteen thousand letters of inquiry are received and answered during the course of a year. This involves not only dictation and transcribing of letters, but a careful system of indexing and filing.

The full time of one person is required for the auditing of bills, the keeping of books and preparation of financial reports for the various divisions. It is estimated that about thirty-five hundred bills are audited and sent to the Comptroller's office for payment during the year. This number includes bills for per diem service of part-time employees.

Records of bird and fish distributions have to be made. Fish stocking cards have to be checked and kept up to date for the guidance of the Division of Fish Restoration in making future plants.

For the information of the Division of Land and Water Acquisition, lists of all leases on public shooting grounds and leased streams must be kept on file showing the dates when such leases expire and come up for renewal.

For the Division of Law Enforcement permanent records have to be kept of arrest reports, of which about eight hundred are received during the course of a year, and Town Clerks advised by letter of both the revocation and restoration of license privileges.

The above review does not begin to cover all of the detail connected with our office routine, but is enough to show the large volume of essential work that must be done. At the present time we really need one full-time additional clerk to cover properly the work we have to do, but because of the State's economy program, we are not permitted to employ any additional help at this time.

The administration budget is only about eight per cent of the total for the year, and the entire expense of the office is met by a special appropriation made by the Legislature for that purpose. (See the financial statement in the back of this report.)

## DIVISION OF FISH RESTORATION

The Division of Fish Restoration is not only concerned with the hatching and rearing of fishes, but with the conservation and restoration of natural conditions which are beneficial to fish life and which are constantly changing in a thickly populated industrial State such as Connecticut.

The work of providing more and better angling is fraught with many difficulties concerning which the average citizen has, unfortunately, little knowledge.

### 1. Pollution.

Many of our streams are wholly unfit for the maintenance of fish life owing to excessive industrial pollution. The Naugatuck River is an example. Pollution not only destroys fish life but it invariably destroys the food upon which fish life is dependent.

Stocking operations are not only prevented in many streams by constant pollution, but in many cases are seriously interfered with by occasional pollution, sometimes wanton in character, which destroys large numbers of fishes planted at the expense of sportsmen.

Our laws concerning pollution (industrial and sewage) are ineffectual and "without teeth".

However, progress has been made in spite of this and other drawbacks.

### 2. Drought.

Continued periods of low water and the consequent drying up of many of our smaller streams is a limiting factor in our endeavor to increase our operations.

### 3. Dams.

Although the law requires that the Board's permission be secured before building, altering, or removing dams or draining ponds, many instances have come to our attention where such work has been done without our knowledge either because of ignorance of the law, or presumption that a permit from the State Engineer was sufficient, with the result that there have been several heavy losses due to draining, which washes all the fish down to tide water, and to building dams to create ponds, the filling of which leaves the stream below dry.

Incidentally, dams increase the temperature of the water, and often make the smaller streams unsuitable for trout.

The Board proposes to prosecute violators who thus destroy State property.

#### **4. Mixed Stocking.**

Heretofore many or several species have been introduced into or allowed to exist in the same water, and as all fish are cannibalistic and many highly predacious, this condition must be corrected. Therefore, all ponds on State-owned land and State-leased streams are being surveyed as to area, depth, character of bottom, flora, etc., so that they may be classified with regard to their adaptability for different species with which they will be stocked.

Carp are being removed from several ponds, and pickerel will be segregated from bass.

We have a sufficient number of lakes and ponds to provide many for each species.

#### **Streams for Women.**

The Chairman of the Board has proposed to set aside next Spring a stretch of State-leased water near the geographical center of the State for the exclusive use of women anglers, and to employ a woman who is familiar with fly casting for trout as a deputy warden. This action is believed to be in line with modern tendencies, and the constantly increasing interest of women in all forms of sport.

It is hoped that this action will strike a responsive chord among women who love the outdoors, and that the first experiment will lead to a very general acceptance of fly fishing as a great sport for women.

The Board will in every way encourage women to take active interest in this great recreational activity.

#### **Trout.**

During the biennium trout have been propagated very successfully. Increased production of adult trout has been made possible by the construction of ponds at Kensington. This property was purchased in 1930, and a good start has been made toward the development of a well-equipped hatching and rearing station. We are now operating large feeding ponds at Punch Brook, and

a pond at Cherry Park, both operated as a part of the Burlington Plant. The Windsor Locks Hatchery is operated very successfully to the limit of its capacity. We are also operating rearing ponds at the Shade Swamp Sanctuary in Farmington and at the Pachaug Forest in Voluntown. The latter are capable of much greater development.

The chief interest of sportsmen is in the rearing of adults. During 1932, the plants of adult trout amounted to 240,479, with a weight of 45,740 pounds and a value at the commercial hatcheries of \$41,124.47. These trout were all weighed and counted. In addition to these, many fingerlings were planted as shown in the tables. Though the fingerlings do not produce immediate sport, if properly planted they will give good results in the future.

Once brown trout are placed in streams suitable for them, the demand for them increases and we are planting more of this species each year. In 1932, 46,544 were planted with an average weight of over one-quarter of a pound. Brown trout of legal size are the most difficult to produce, as it takes two years to produce them. Their growth is slow the first year, so that they cannot be planted as yearlings, but the second year growth is very rapid. All eggs for the production of brown trout come from wild stock.

Rainbow trout are becoming more popular with the sportsmen, and can be produced at a smaller cost for a given weight than either the brook or brown trout. In 1932, 5,426 rainbow trout were planted in our streams.

### **Pond Fishes.**

The main source of supply for pond fishes for stocking was for some time the municipal reservoirs, from which fish were and still are removed in considerable numbers. The use of copper sulphate by water companies for clearing these waters, has, in many instances, greatly reduced their value for fish production. Therefore, we have been gradually developing other sources of supply. We have reached the point where a large number of certain species, particularly bullheads, is being produced in artificial ponds. The cost of this method is much less than the cost of salvage. As more ponds are available for propagation, the reservoirs will be more valuable as a source of supply for brood stock for these ponds as well as for stocking open waters.

A great many anglers find recreation in pond fishing, — for which a long season is provided. For that reason we are devoting more attention to the propagation of pond fishes.

### **Smallmouth Bass.**

Among the fresh water game fishes, the smallmouth bass is one of the most popular. Its gameness and sporting qualities are supreme. The propagation of bass, however, is very uncertain and involves quite a lot of expense. Some stock is secured while netting the reservoirs and such stock is placed in lakes requiring new brood stock. While such stocking is often of great value to the ponds stocked, it would be of much greater value if the Board could have more control of the waters stocked.

In 1931, an arrangement was entered into with Mr. Beeman of the Waramaug Bass Hatchery to hold bass fry for us to the advanced stage. There were planted from this lot 30,500. We also secured direct from Wangum Reservoir fry which were placed in ponds for rearing. From these fry we obtained 5,445 fingerlings for planting. Most of these fingerlings were reared in a pond in which trout had been wintered.

In 1932, by an arrangement with the U. S. Bureau of Fisheries, 60,000 fry were taken from the Wangum Reservoir. Of this number, the Bureau planted 20,000 in Connecticut waters, and turned over to us 40,000 which were planted by our employees. These were taken directly from the hatching beds in the reservoir and held in a pen until they scattered in search for food. At this time they were in good condition for planting. No rearing was undertaken during 1932.

It is not claimed that bass cannot be reared, but that results are too often unsatisfactory and expensive. Better results can be secured by setting aside proper refuges where the supply can hatch and grow naturally.

### **Calico Bass.**

This species was introduced years ago into Lake Whitney at New Haven and from this source we have secured brood stock for distribution throughout the State. They can be produced in large numbers at little cost and are a very fine pan fish. They furnish food for predacious fishes, and are probably the least harmful to other species of all pond fishes. These facts were demonstrated by results obtained in rearing ponds that were used for the production of fingerlings.

One hundred adult specimens placed in Taplin Pond in the spring produced 40,000 good fingerlings the following fall.

Two trout wintering ponds in Burlington were stocked in the Spring of 1931, and before these ponds were again needed for trout, 28,900 calico bass fingerlings were removed. A small pond

in Middlesex County stocked with adults last spring produced about 34,000 fingerlings.

These fish can be reared with bullheads and each species will reproduce to full capacity. Some reservoirs which we have netted have been stocked with the consent of the authorities and are now producing good returns of calico bass for stocking public waters. The results are especially gratifying as it is an introduced species which does not seem to be in direct competition with our native species.

### **Pike Perch.**

Pike perch have been introduced into some of our lakes. Candlewood Lake and Zoar Lake are those in which the best results have been secured. Specimens up to eight pounds in weight are being taken. There are other lakes in which good results could undoubtedly be secured and all possible efforts should be made to increase the number of these species.

They must be kept from the smaller ponds as they require considerable range and feed.

### **Yellow Perch Fry.**

The hatching of yellow perch was started years ago as a means of utilizing eggs which had been left by spawning fish on brush or trees during high water and which would have been lost as the water receded and left them exposed to the air. The eggs were removed and hatched by various methods, including hatching jars, submerged cages, etc.

The securing of eggs under such conditions depended on the rise and fall of the water. Sometimes great numbers were taken and sometimes it was a complete failure. To be sure that a supply was available, we inaugurated the system of trapping spawning fish and holding them in crates where eggs were deposited naturally, or in many cases spawned artificially. If fry were to be distributed, this was a great advantage, as eggs placed in hatching equipment were of a known age and distribution could be planned for the proper time.

In securing eggs from deposits in the lakes or streams, they are so mixed that eggs of several days' difference in age are placed in one receptacle and distribution is difficult.

When they are available, we remove eggs deposited in municipal reservoirs directly to the lakes to be stocked and place them in wire cages suspended in the water. As fast as the fry hatch, they escape into the waters to be stocked, and the difference in age of the eggs when taken is of no great consequence.

This season a location was discovered where the water, backed up by the tide, caused a very great loss of eggs under natural conditions. On high tide a great number of eggs were deposited in a cove and on each receding tide all, or nearly all, were lost. During the falling tide it was possible to secure millions of eggs, which were each time taken directly to the lakes and placed in cages, where in due time they hatched and supplied fry for growth and future catching. The number taken from this location in 1932 amounted to 37,500,000 and the cost was very little.

A pond located on a piece of ground rented by one of the County Wardens was stocked with several adult perch taken from Salmon River and from this pond 11,000,000 eggs were taken for distribution. The balance of the plant of 90,300,000 was secured in our usual manner from Keeney Cove.

This species of fish can be provided for the lakes and ponds to the full number desirable, and we feel that during 1932 the waters were stocked to their maximum capacity. The cost of this work is very little in comparison with the results obtained.

### **Forage Fishes.**

As waters are more heavily fished and are restocked to furnish more fishing, the question of a food supply becomes of importance. In many instances we have introduced a supply of minnows into lakes which seemed to be in need of them. These minnows have been procured from the Connecticut River which has an unusually heavy supply. The fact that they are sometimes useful does not indicate that all lakes should be supplied with them and discretion is being used in their introduction.

### **Shad.**

The propagation of shad during the biennium has been successful. It did not reach the high peak of 1929 when 18,833,000 fry were planted, but the number of 11,583,000 planted in 1931, and 6,674,000 planted in 1932 are each far above the plants made in earlier years when the work was declared successful. Shad are said to return to their birthplace when four years old. Therefore, since the largest plant of fry ever made was in 1929, the season of 1933, four years later, should show a large run. However, there are many things which enter into the picture besides the artificial hatching. Pollutional conditions are such that apparently no hatch takes place in the Farmington River and some portions of the Connecticut River.

Conditions are constantly growing worse and this affects not only the natural hatching, but limits the territory available for

planting of fry artificially hatched. Speed boats in the Salmon River cause a tremendous disturbance in the water and result in the loss of many eggs and fry during the breeding season.

In spite of all this, our methods are proving successful. The mere fact that we are able to take as many eggs as we do now, with a crew no larger than was employed in earlier days when only a small number of eggs was taken, in itself proves that an advance has been made.

The work at Salmon River is carried on for propagation purposes only. On the Farmington River and points on the Connecticut River near Windsor, eggs are taken from fish caught by commercial fishermen and transferred to the Leesville Hatchery for hatching. All these eggs would be lost if not taken by us.

As a whole, our artificial conditions are better than when the propagation of shad was begun in 1924, but natural conditions are far worse than at that time. The work will be continued in the expectation that eventually pollutional conditions will be corrected and the industry of fishing for the famous Connecticut River shad may again become a truly prosperous and important one.

### **Marine Fishes.**

It should be understood that money received from the sale of angling licenses is not expended for commercial fisheries. The propagation of commercial species is carried on with money appropriated for that purpose and with such additional funds as may be received from commercial licenses.

The Board has withdrawn the restrictions on use of crabs for baiting eel pots, and used its influence to have Governor Roosevelt veto a bill passed by the New York Legislature which would have debarred Connecticut citizens from fishing in the marine waters of New York State.

### **Lobsters.**

The rearing of lobsters to the fourth stage was first undertaken by this Department in 1930 and the results of that year, with a full description of the equipment used, are contained in our biennial report for the period ending June 30, 1930. During 1931 slight changes in construction were made, but with no change in principle. In 1932 additions to equipment were made to as great an extent as possible without enlargement of the building, with a corresponding increase in output. The total production of the year was 151,285 by actual count.

Egg-bearing lobsters were purchased from lobster fishermen and held for the fry to hatch. The number of adult lobsters held was 423, from which we produced the above number of fourth stage lobsters.

An addition to the present building has been provided for. Equipment to fully utilize this space will be installed before another season begins. These additions will about double the production in 1933.

### **Flatfish.**

The propagation of flatfish, which was first undertaken in 1928, has been successfully carried on and in the season of 1932 the greatest number of any year was produced,—178,385,632. Spawning fish are procured from the fishermen for one-half the market price and thus the fishermen are contributing one-half the cost of brood stock. The capacity of our hatchery for producing fry of this species is almost unlimited as the eggs are very small and many can be held in one jar. There is sometimes difficulty in securing the spawning fish, and the room in which they can be held until the spawn is deposited is also a limiting factor. The fishermen are now planning to provide better facilities for bringing in live fish and with an addition to our holding capacity, we can easily double the present output and perhaps make further increases.

### **Frostfish.**

The propagation of this species was carried on for two years,—1930 and 1931. Though the propagation was successful, 8,464,000 being planted in 1931, the value of the fish did not seem to warrant a continuation of the work, and in 1932 it was discontinued.

### **Smelt.**

The propagation of this species was first undertaken in Connecticut in 1924 at Niantic. It was afterwards carried on at Westport and Noank with considerable success.

Our highest production was in 1928 with an output of 52,000,000. It has since that time dropped to 9,607,000 for 1932. This great drop was partially caused by adverse weather conditions and it is believed by some that the increase in the number of bluefish and other predatory fishes along the coast has caused a falling off not only in the number of smelt but of other smaller fishes found in Long Island Sound. The total for the two years was 31,190,000.

At the Noank Hatchery the supply was secured from pound nets in the Pawcatuck River. The supply from this source had been very good, but in 1932 dropped almost to nothing. Fish caught here were ripe when taken and spawned during the first night in our tanks. This allowed us to carry on a large amount of hatching with little space and at low cost.

Very real progress is seen when we look back over a period of years and make comparisons. It is interesting to note that while in 1924 the catch of one-half bushel was considered good for one haul, in 1932 a catch of six bushels was considered very poor.

As the smelt is a very fine food fish and also provides some sport, it is most desirable to carry on this work. This species has been introduced in some inland lakes with good results.

While our smelt work has fallen off during the last two years, the work of hatcheries operated by other States has been reduced to practically zero. We are well equipped to carry on this work at Westport, but at Noank the place where we have operated for several years is not now available and if the work formerly done at Noank is to continue some other desirable location will have to be selected.

### **Izaak Walton League.**

The New London Chapter of the Izaak Walton League constructed a trout rearing pool and on November 30, 1931, we delivered to them 2,000 brook trout fingerlings weighing 105 lbs. On April 9, 1932, 1,825 trout were removed, weighing 133 lbs. The fish were in very good condition for planting and the slight increase in the total weight was accounted for by the loss of 175 during the winter. The same pond held brown trout during the early part of the summer and they were planted after the angling season closed.

This League leased Perry's Ice Pond in New London and in the Fall of 1931 it was drawn by our employees and members of the League working together, with a result that about 54,000 pond fishes, including shiners, were taken.

This League is prepared to operate two trout rearing pools this winter which will care for from three to four thousand trout. We furnish all the food and assist in planting the trout, which all go to open waters.

## DIVISION OF GAME RESTORATION

In this department, we have been able to do many things that will make for better hunting and more sporting shooting and the outlook for continued improvement is good, providing we continue to have the fine support and cooperation that the great majority of sportsmen have afforded us.

### Pheasants.

This bird, which is, of course, not indigenous to Connecticut or the United States, affords sport and excellent food, but unless many precautions are taken it becomes easy prey to predators and poor sport for hunters.

To make for better sport in hunting and to insure fairness to all sportsmen, regardless of whether they were members of organizations or not, the Board decided in July, 1931, that all releases of birds, particularly pheasants, should be privately made by wardens and witnessed by a disinterested person to evidence the release and count. This procedure materially lessened concentrated barrages in known coverts and resulted in more sporting hunting.

With due notice to breeders, the Board announced its determination to buy only range-raised birds, these being wilder and better able to protect themselves than semi-tame pen-raised birds.

At the suggestion of Commissioner Griffin, the Board began this year to release mature cocks and hens in the early spring before the breeding season, in order that there would be natural multiplication in the wild. It is hoped that each year we shall be able to increase the spring release of mature birds and decrease the purchase and release in the fall of immature ten or twelve weeks old birds, which are easy prey for predators and which have greater difficulty in sustaining themselves.

The Superintendent, who is widely versed in breeding, is working in cooperation with breeders to improve the game quality of birds and their protective coloration.

### Quail.

During the biennium the Board bought and resold to Connecticut breeders 277 pair of quail with the expectation of buying and releasing some of the progeny next spring. Plans are under way for the purchase of some pure-bred Northern Bobwhite from Wisconsin and Massachusetts, to be exchanged for breeder stock now in the hands of our breeders, which will be released. In this

way we hope to stock with quail that are thoroughly acclimated and inured to cold weather.

The 1931 open season on quail does not appear to have made any inroads on the quail population. The bag taken was quickly replaced by natural reproduction and the stock was undoubtedly improved by the breaking up of old coveys.

The bag of quail taken was evidently small due no doubt to our sportsmen's unfamiliarity with quail shooting.

### **Grouse.**

All signs point to a slow but certain and continuous decrease in the population of this king of game birds, the ruffed grouse. This decrease is unquestionably due to the inroads of disease thought to be akin to tularemia, because of the frequent presence of numerous ticks on the birds behind the "ears". Moreover, there seems to be a seven-year cycle of scarcity and comparative plenty which just about parallels the scarcity and plenitude of rabbits, thus indicating a relation between the two.

The long cycle of scarcity and plenty is typical of the insect world (17-year locusts, etc.) and if we knew that the years of plenitude of rabbits and ruffed grouse were the years of scarcity of ticks, we would be reasonably sure of the source of the disease.

Predators take a heavy toll of our grouse, and the situation is such that an endeavor is being made to encourage breeders to attempt the breeding and rearing of these birds.

### **Ducks.**

To protect the future of duck hunting for sportsmen, and to provide areas for breeding in the wild mallards and black ducks, the Board has for the first time acquired lands along the Connecticut River and in Cromwell Meadows.

Wild birds will be trapped in large cages at Bride's Pond in proper season, wing clipped, and removed to breeding areas previously cleared of vermin, where plenty of food is available, there to breed and moult and fly away. Experience shows that the progeny and others will return each year to multiply.

In similar fashion, especially suitable ponds will be started as breeding areas, all in the hope that in not more than five years we may have plenty of ducks, which is to say good sport and much delicious food.

Later we hope to encourage large flights of Canadian geese by establishing permanent protected feeding areas.

### **Sora Rail.**

These birds, which are a wholly migratory species, seem to continue static as to quantity.

### **Woodcock.**

This species is native and migratory and has shown a definite increase in recent years.

### **Rabbits.**

More rabbits are needed in many sections of our State to provide better hunting and to act as "buffers" between predators and birds. It is well known that many predators, such as gray fox, invariably take rabbits in preference to birds.

Attempts have been made to import cottontail rabbits with the result that in most cases the rabbits arrived with many dead and others showing signs of disease, which was not in evidence at the time of shipping.

Deeming the shipment of rabbits and hares into the State fraught with much danger to our native mammals and birds, the Board has banned their importation.

To increase the rabbit population the Board proposes to authorize in a limited way the trapping of breeder pairs by dependable persons or organizations, who will agree to provide the equipment for breeding and rearing them in large fenced areas in accordance with the "Pennsylvania Method" and turn out the progeny in open hunting areas under the Board's supervision.

### **Raccoons.**

The Board owes the raccoon hunters and field trial enthusiasts aid and abetment in the restoration of these mammals, of which there has been and is a scarcity in some sections of the State.

In the past, endeavors have been made to breed and rear raccoons in captivity. These proved unsatisfactory as the raccoon so reared were so tame as to refuse to return to the wild or maintain themselves. This was also true of raccoons bought from raccoon farms during the superintendency of the late John Titcomb.

The Superintendent proposes to meet with members of the raccoon association and endeavor to work out plans and tests that will lead to a feasible means for bringing about a definite improvement in the situation.

### **Deer.**

These mammals have been protected for many years in Connecticut, and while there appears to be some increase in population, we are unwilling to recommend an open season. At the same time we are not in a position to further control the illegal killing owing to the fact that there is no money available for this purpose, inasmuch as the expense of our enforcement activities is borne by the money derived from sportsmen's license fees and should only properly be spent on the enforcement of laws that have to do with game mammals and birds. It is true that the State law imposes on this department the protection of deer, yet it carries with it no appropriation for the purpose.

### **Grey Squirrels.**

Of these rodents there is at present a great plenitude.

In towns and cities where they have become a nuisance, the Board arranged to have them trapped (with box traps) and removed to wild areas.

### **Song and Insectivorous Birds.**

The Board would be delinquent in its responsibility and duty to the citizens, if it did not give time, thought and attention to the protection and preservation of these highly desirable species of birds, which, although they are protected the year round, are obviously decreasing in the number of species and number of each species.

Illegal killing, while still practiced by a few, mostly aliens, does not account for their continued decline.

Dr. Henry Smith Williams of Roxbury, the famous scientist and ornithologist, whose collection of nests made by birds with colored yarn, silk and strings is undoubtedly the finest extant, advances the theory that the many species which annually migrate to South America across the Gulf of Mexico (some seven hundred miles of water) are slowly but surely being exterminated by drowning during storms and hurricanes. Certain it is that the same bird rarely if ever returns more than three seasons.

Perhaps when more prosperous times return, a survey may be made to determine the practicability of filled in or floating refuges or resting stations in the Gulf.

Our plans include much educational work in the field of bird feeding and protection among children and citizens generally, if and when funds are made available (see Six Year Program).

Meantime, if cats were everywhere controlled and strays humanely disposed of, a great forward step would be taken.

If farmers and bird enthusiasts would only realize that the very presence or sight of a cat is a retardant to bird life, they would turn to and help in this work of protection.

The Board proposes to ask the next Legislature for authority to hold a State-wide Forest and Wild Life Restoration Show at Hartford (non-profit but self-supporting) in February, at which time and place much can be done to develop a greater interest in the work of restoration and conservation.

### **Predators.**

Connecticut pays a fearful price in desirable birds and mammals to feed a great horde of predators which take their toll day in and day out.

Gray fox, crows, weasels, black snakes, red squirrels, and snapping turtles, to mention only a few, abound in our State and must be controlled if we are to progress.

Citizens can do the desirable birds and mammals no greater service than to procure licenses to trap (humanely) and kill these destroyers.

### **Sanctuaries.**

There is hardly a single item in the whole realm of restoration and conservation on which there is more wrong thinking and misguided action than there is with regard to this subject.

The average well-meaning citizens, and even many otherwise well-informed people, have the mistaken idea that to set apart an area by fencing or posting against shooting creates a sanctuary and affords protection to desirable birds and mammals, when in reality the action, especially in Connecticut, establishes a feeding station for highly undesirable predators.

The effect is to unfairly lure song, insectivorous and game birds and mammals to destruction.

Properly managed sanctuaries are indeed rare, as their maintenance requires much time and effort and constant vigilance. Otherwise the unbalanced relation between species that now prevail is afforded extreme opportunity with the result that the so-called sanctuary soon becomes a vermin farm, infested with a great predominance of predators.

The Board is opposed to the establishment of sanctuaries by the State, organizations, or individuals unless their care and management by competent persons is provided for.

The setting aside of large tracts and areas and posting them against shooting without providing for their care seriously retards conservation, for if destructive predators have to be constantly controlled in the small sanctuary in the town of Fairfield, what must be the condition in some of the large areas posted as sanctuaries?

Last winter experienced hunters with dogs were sent into many State sanctuaries, under the guidance of wardens, to reduce the gray fox, but we actually have much more sanctuary area than we can properly care for unless more money is available.

We ask that citizens cease to establish so-called sanctuaries unless, or until, we or they can provide for their management.

### DIVISION OF LAW ENFORCEMENT

In the past the enforcement of the fish and game laws was practically the only duty of this division. The enforcement of these laws has been so successful that we have reached a point where the wardens can devote less time to protection of fish and game and more time to a constructive program of fish and game restoration.

To carry on this work, we have a force of eight full-time county wardens, eight full-time deputies and approximately seventy part-time deputies. The County Warden is responsible for the enforcement of the laws in his county, and he in turn is responsible to the Chief of the Division.

During the biennium, the wardens in addition to law enforcement duties have rendered valuable service in other directions, such as assistance in the distribution of trout, predator control, taking of stream temperatures and surveying of streams and ponds, and inspecting, crating and distributing pheasants, quail and wild ducks liberated by the Department. They also engaged in the winter feeding of birds.

Improvement in law enforcement has been brought about by the issuance of warnings in border-line cases. Whenever the wardens believe that the ends of justice will be met in this manner, a special report card, giving all the details of the case, is made and sent to the Hartford office. These cards are alphabetically filed so that chronic violators may readily be checked and dealt with as circumstances warrant. The wardens issue warnings in a great many more cases than they make arrests. This method has met with the approval of sportsmen and courts and has resulted in a much higher percentage of convictions in cases where arrests are made.

The law requires that sportsmen must have their licenses on their persons and that they must also wear their license buttons in a conspicuous place on the outer clothing. In the past it was the custom of the warden to stop any sportsman from fishing or hunting if he did not have both license and button in his possession. A voucher system is now used which enables the sportsman to continue hunting or fishing for a limited period of time, upon his agreement to send into the Hartford office the voucher together with his missing license or button. This is a distinct advantage to the sportsman and at the same time enables the Department to apprehend any unscrupulous hunter or angler who may have loaned his license or button to another or who may have borrowed one for his own use.

Because of the varied activities of the wardens and the fact that they are using much of their time for other than law enforcement duties, it is recommended that they be called Wild Life Protectors, which would be more appropriate.

During the biennium from July 1, 1930, to June 30, 1932, arrests for violations of fish and game laws were made to the number of 1,695, and of this number 1,655 were convicted. Those convicted paid \$28,711.69 in fines and costs.

### **DIVISION OF LAND AND WATER ACQUISITION**

The preceding chapters have dealt with the conservation of fish and game by the enforcement of the laws which protect them and their restoration by natural and artificial methods. It is evident that such work is futile unless places for hunting and fishing are acquired and maintained for the public.

It is the function of this division to provide such areas. This is an increasingly difficult task as there is a growing tendency on the part of landowners to post their property against hunting and fishing.

Funds appropriated for this purpose by the Legislature are just about adequate to keep up renewals of leases which expire from time to time. With an ideal demonstration area in all but two counties under the present plan, we have gone about as far as funds for this purpose permit.

We must, therefore, find a plan for providing additional areas at a smaller cost.

It is evident that what the landowner wants most is protection against abuse of his property by careless hunters. If the State can give him such protection through State regulations, State posters, and State patrol, and in return receive the use of his

lands for regulated hunting without further compensation, it will be possible to extend the areas for public shooting at a much lower cost.

As this report goes to Press, six thousand acres have been turned over to the State by the Bristol Water Company, and an additional six thousand by the Torrington Water Company for regulated hunting on the above plan.

During the biennium, this Division has acquired for public use 8,904 acres of shooting grounds and approximately 60 miles of stream. In addition 386 acres of good duck shooting land have been acquired at Lord's Cove, Great Island and Cromwell Meadows.

The Legislature will be requested to appropriate an additional \$10,000 for the acquisition of rights of way to lakes and ponds. The need for this is urgent as many lakes and ponds throughout the State are being closed rapidly to fishing because the statutes, through the trespass law, permit such action by landowners.

Special acknowledgment is made of the cooperation of the Connecticut Light and Power Company in turning over to the State the fishing rights on its properties located on the following streams: Shepaug River, Housatonic River and its tributaries, Farmington River, Sandy Brook, Still River in Winchester, Thames River at Kitemaug, Quinebaug River and Shetucket River.

## SUMMARY OF PROGRESS

**Fish planted, game released, land acquired, water leased, and enforcement record.**

Fish Planted	1921 and 1922	1929 and 1930	1931 and 1932	Comparison † Decrease * Increase
Trout Fingerlings .....	368,490	659,988	662,785	2,797*
Trout Adults .....		454,779	461,913	7,134*
Yellow Perch Fry .....		126,330,000	152,450,000	26,120,000*
Smallmouth Bass Fry .....		10,000	70,500	60,500*
Shad Fry .....		34,853,000	18,257,000	16,596,000†
Pond Fishes, including pickerel, y. perch, w. perch, l. m. bass, s. m. bass, calico bass, bullheads, sunfish, shiners, northern pike, rock bass, suckers .....	28,717	804,296	1,046,646	Figures for 1932 are incomplete
Smelt Fry .....		83,001,500	2,500,000	2,500,000*
Smelt Adults .....			31,190,000	51,811,500†
Flatfish Fry .....			1,000	1,000*
Frostfish Fry .....		140,823,579	248,198,296	107,374,717*
Frostfish Fry .....		4,455,000	8,464,000	4,009,000*
Egg Lobsters .....		4,902		
Fourth Stage Lobsters .....		42,262	196,060	153,798*
<b>Totals</b> .....	<b>397,207</b>	<b>391,439,306</b>	<b>463,498,200</b>	
<b>Game Released</b>				
Raccoons .....		51		51†
Pheasant Eggs .....	10,383			
Pheasants .....	6,897	35,244	41,524	6,280*
Mallard Ducks .....	186	346	408	62*
Mallard Duck Eggs .....	1,264			
Quail .....		306	168	138†
<b>Land and Water Acquisition</b>				
Open land under lease at end of fiscal period.....		41,141 A.	50,045 A.	9,904 A.*
Duck marshes acquired .....			386 A.	386 A.*
Stream miles under lease at end of fiscal period....		160	220	60*
<b>Enforcement Record</b>				
	July 1, 1920 to June 30, 1922	July 1, 1928 to June 30, 1930	July 1, 1930 to June 30, 1932	
Arrests .....	974	1,746	1,655	91†

## FINANCIAL STATEMENT

July 1, 1930 — June 30, 1931

	Available Resources	Expen- ditures	Balance
Administration .....	*\$ 23,513.85	\$ 23,083.20	\$ 430.65
Acquisition of Fishing and Hunting Rights .....	* 21,417.06	21,415.49	1.51
Protection and Propagation of In- land Fishes .....	187,204.87		
Field Supervisor (Salary and Expenses) .....		4,792.35	
Warden Service .....		49,987.70	
Trout Work .....		40,703.38	
Reservoir Work .....		7,930.14	
Shad Work .....		3,525.43	
Perch Work .....		574.77	
Buildings and Equipment .....		2,247.04	
Permanent Improvements .....		5,287.81	
Purchase of Property .....		2,750.00	
Printing of Licenses and But- tons .....		1,289.55	
Professional and Scientific Work		1,110.85	
Miscellaneous .....		739.01	
		\$120,938.03	\$ 66,266.84
Protection and Propagation of Ma- rine Fishes .....	** 15,438.55		
Warden Service .....		2,424.11	
Maintenance of Boat Tern.....		1,622.33	
Lobster Hatchery .....		5,160.79	
Purchase of Lobsters .....		92.75	
Tomcod Work .....		900.00	
Flatfish Work .....		337.24	
Smelt Work .....		1,015.97	
Miscellaneous .....		431.36	
		\$ 11,984.55	\$ 3,454.00
Protection and Propagation of Game	147,066.76		
Warden Service .....		39,358.52	
Purchase of Game .....		58,125.40	
Game Sanctuaries .....		5,635.96	
Printing of Licenses and But- tons .....		1,491.32	
Miscellaneous .....		574.32	
		\$105,185.52	\$ 41,881.24
	\$394,641.09	\$282,606.79	\$112,034.30

\* Appropriations.

\*\* \$11,967.66 Appropriated.

NOTE: In view of the fact that the expenditures for the protection and propagation of fish and game are paid for out of revenue derived from sale of licenses, it is necessary to hold over a good balance at the end of each fiscal year.

## FINANCIAL STATEMENT

July 1, 1931 — June 30, 1932

	Available Resources	Expen- ditures	Balance
Administration .....	*\$ 23,500.00	\$ 20,860.42	\$ 2,639.58
Acquisition of Fishing and Hunting Rights .....	* 25,825.00	16,350.74	9,474.26
Protection and Propagation of In- land Fishes .....	176,910.39		
Field Supervisor (Salary and Expenses) .....		5,576.35	
Warden Service .....		48,622.17	
Trout Work .....		40,489.41	
Reservoir Work .....		7,877.66	
Shad Work .....		3,379.80	
Perch Work .....		554.89	
Buildings and Equipment .....			
Permanent Improvements .....		6,400.56	
Purchase of Property .....			
Printing of Licenses and But- tons .....		1,059.72	
Professional and Scientific Work		791.30	
Miscellaneous .....		378.51	
		<u>\$115,130.37</u>	<u>\$ 61,780.02</u>
Protection and Propagation of Ma- rine Fishes .....	** 16,968.49		
Warden Service .....		2,525.62	
Maintenance of Boat Tern....		1,084.70	
Lobster Work .....		5,391.56	
Flatfish Work .....		902.84	
Smelt Work .....		844.80	
Miscellaneous .....		346.25	
		<u>\$ 11,095.77</u>	<u>\$ 5,872.72</u>
Protection and Propagation of Game	140,647.36		
Warden Service .....		39,094.10	
Purchase of Game .....		61,932.46	
Game Sanctuaries .....		6,116.07	
Printing of Licenses and But- tons .....		1,194.89	
Miscellaneous .....		1,460.96	
		<u>\$109,798.48</u>	<u>\$ 30,848.88</u>
	<u>\$383,851.24</u>	<u>\$273,235.78</u>	<u>\$110,615.46</u>

\* Appropriations.

\*\* \$12,500 Appropriated.

NOTE: In view of the fact that the expenditures for the protection and propagation of fish and game are paid for out of revenue derived from sale of licenses, it is necessary to hold over a good balance at the end of each fiscal year.

## DISTRIBUTION OF TROUT

1931

### FINGERLING BROOK TROUT

#### Hartford County

Name of Water	Town	No. of Fish
Buckhorn Brook	Enfield	600
Bunnell Brook	Burlington	450
Canfield Brook	Newington	360
Cannon Brook	Suffield	538
Cannon's Ice Pond	Windsor Locks	400
Churchill Brook	Southington	516
Cold Spring Brook	Unionville	540
Dayton Brook	Southington	516
Devine Brook	Suffield & East Granby	408
Dog Lane Brook*	Southington	516
Granger's Brook	Suffield & East Granby	340
Hatchery Brook	Kensington	540
Kennedy Brook	Southington	516
Mill Pond Brook	East Hartford	560
Misery Brook	Southington	516
Moody Brook	Enfield	750
Patton Brook	Southington	540
Podunk Brook	South Windsor	375
Pumping Station Brook	Berlin	516
Roaring Brook	Southington	516
Roaring Brook	Unionville	540
Stratton Brook	West Simsbury	520
Terry's Brook	Scitico	2,100
Whittemore Brook	Suffield	408
Wild Cat Brook	Whigville	750

#### New Haven County

Governor Hill Brook	Oxford	430
Parker's Brook	Meriden	516
Rimmon Brook	Seymour	430
Six Mile Brook	Oxford & Southford	430
Sodom Brook	Meriden	516
Willow Hill Brook	Meriden	516

#### New London County

Anguilla Brook	Stonington	800
Ayer Brook	Franklin	400
Blissville Brook	Lisbon	652
Joe Clark Brook	Ledyard	700
Copps Brook	Stonington	400
Gold Mine Brook	Norwich & Bozrah	42
Great Meadow Brook	Voluntown	400
Havey Brook	Griswold & Plainfield	400
Hunt Brook	Montville	500
Latimer Brook	East Lyme	800

Name of Water	Town	No. of Fish
Little River	Canterbury & Sprague	700
Amasa Main Brook	North Stonington & Preston	338
McCarty Brook	Franklin	400
McGuire Brook	Groton	600
Mineral Spring Brook	Bozrah	400
Norwichtown Brook	Norwich	300
Palmer Brook	Griswold	300
Red Brook	East Lyme & Niantic	100
Shunoc River	North Stonington	400
Sterrie Kinne Brook	Griswold	252
Stony Brook	Montville	500
Trading Cove Brook	Montville & Norwich	400
Whittle Brook	Montville	100
Wyassup Brook	North Stonington	400
Yawbuck Brook	North Stonington	252

### Fairfield County

Ball Brook	New Fairfield	1,250
Barrett's Brook	Wilton	1,500
Beaver Pond Brook	Huntington	602
Black Brook	Shelton	430
Boggy Slough Brook	Huntington	688
Boys Half Way River	Monroe	1,650
Branch Brook	Stamford	600
Cross Highway Brook	Fairfield & Southport	750
Curtis Brook	Newtown	400
Dr. Smith's Stream	Norwalk & Westport	1,500
East Swamp Brook	Danbury & Bethel	1,250
East Swamp Brook	Bethel	400
Far Mill River	Shelton	1,600
Great Plain Brook	Danbury	1,000
Hattertown Brook	Newtown	500
Haviland Brook	Newtown	1,200
Ivy Brook	Shelton	430
New Fairfield Stream	New Fairfield	1,500
Ondex Brook	Monroe	400
Plum Tree Brook	Bethel & Newtown	2,250
Pocono Brook	Newton & Bethel	1,000
Pond Brook	Newtown	1,000
Poor House Brook	Stamford	1,200
Pumpkin Brook	Stratford	400
Rippowam River	Stamford	1,000
Scudder Brook	New Fairfield	750
Shaw's Stream	Huntington	430
Stony Hill Brook	Danbury	1,250

### Windham County

Backwater Brook	Thompson	1,020
Baptist Brook	Thompson	375
Barrett Brook	Putnam	570
Bebbington Brook	Ashford	600
Blackmore Brook	Thompson	375
Bungee Brook	Woodstock	1,200
Carpenter Brook	Putnam	570

Name of Water	Town	No. of Fish
Culvert Brook	Putnam	570
Cummings Brook	Brooklyn	600
Ekonk Brook	Plainfield	750
Green Brook	Woodstock	750
Herrindeen Brook	Woodstock	900
Horse Brook	Plainfield	500
Indian Hut Brook	Eastford	400
Kenyon Brook	Sterling	750
Little Dam Tavern Brook	Putnam	950
Little River	Putnam	1,140
Long Branch Brook	Thompson	950
Mill Brook	Plainfield	750
North Woodstock Brook	Woodstock	750
Pine Brook	Brooklyn	400
Quondock Brook	Killingly & Sterling	2,250
Rhodes Brook	Thompson	570
Robbins Brook	Thompson	760
Rounds Brook	Eastford	600
Still River	Eastford	600
Strout Brook	Thompson	570
Torry Brook	Putnam	570
Weaver Brook	Woodstock	1,200
Wheaton Brook	Putnam	760
White Brook	Pomfret	600
Wolf Den Brook	Pomfret	300

#### Litchfield County

Burger Brook	Plymouth	400
Hall Meadow Brook	Norfolk	800
Hancock Brook	Plymouth	600
Ivy Mountain Brook	Litchfield	450
Mill Brook	Sharon	700
Nepaug River	New Hartford	450
Pitch Brook	Morris	600
Dr. Wallace Brook	Litchfield	300

#### Middlesex County

Albert Bacon Brook	Middletown	516
Ball's Brook	Durham	1,500
Chittenden Hollow Brook	Clinton	750
Fowler's Brook	Middletown	1,000
Great Brook	Chester	565
Hurd Brook	Deep River	450
Mill Rush Brook	Higganum	465
Parker's Hill Brook	Durham	1,250
Roaring Brook	Haddam	465
Wadsworth Brook	Durham	1,250
White's Brook	Durham	750
Winthrop Brook	Deep River	565

#### Tolland County

Abbey Brook	Somers	900
Aborn Brook	Ellington	800
Alden Brook	Stafford	500

Name of Water	Town	No. of Fish
Cemetery Brook	Tolland	800
Chestnut Hill Brook	Columbia	335
Gillette Brook	Somers	400
Gulf Stream	Somers	1,000
Hop River	Bolton	800
Kings Brook	Mansfield	500
Meachams Brook	Tolland	800
Middle River	Stafford	500
Mott Brook	Columbia	400
Pecks Brook	Ellington	950
Pinney Brook	Ellington	500
Schnade Brook	Somers	600
Shoddy Mill Brook	Andover	600
Skinner Brook	Andover	400
Still Brook	Stafford	500
Thrasher Brook	Somers	1,000
Town Farm Brook	Vernon	800
Tucker Brook	Vernon	600
Watchaug Brook	Somers	600
	Total	106,396

**ADULT BROOK TROUT****Hartford County**

Buck Horn Brook	Enfield	250
Cherry Brook	Canton	300
Mill Brook	Windsor	1,400
Mine Brook	Burlington	403
Roaring Brook	Glastonbury	250
Smith Brook	Glastonbury	200
Terry Brook	Enfield	250
Water Works Brook	Enfield	250

**New Haven County**

Branford River	Branford & North Branford	180
Eight Mile River	Oxford, Middlebury & Southbury	1,700
Five Mile Brook	Seymour & Oxford	100
Little River	Oxford & Seymour	700
Munger Brook	North Branford	150
Neck River	Madison	300
Ten Mile River	West Cheshire	472
Wharton Brook	Wallingford	240
Mill River or Willow Brook	Mt. Carmel & Hamden	1,300

**New London County**

Anguilla Brook	Stonington	805
Beaver Brook	Franklin	700
Blissville Brook	Lisbon	300
Dickinson Creek	Colchester	500
Havey Brook	Griswold & Plainfield	300
Hunt Brook	Montville	400
Jordan Brook	Waterford	400
Myron Kinne Brook	Voluntown	2,250

Name of Water	Town	No. of Fish
Latimer Brook	East Lyme	745
Little River	Sprague	300
McGuire Brook	Groton	700
Salmon River	Colchester	403
Shunoc River	Stonington & North Stonington	900
Trading Cove Brook	Norwich & Montville	650
Wyassup Brook	North Stonington	400

**Fairfield County**

East Swamp Brook	Bethel	674
Far Mill River—East Branch	Huntington & Shelton	250
Gilbert Brook	Newtown	850
New Fairfield Stream	New Fairfield	800
Norwalk River	Wilton & Norwalk	925
Pond Brook	Newtown	700
Saugatuck River—West Branch	Weston	850
Titicus River	Ridgefield	450

**Windham County**

Mill River	Plainfield	100
Muddy Brook	Woodstock & Thompson	200
Quondock River	Sterling	500

**Litchfield County**

Butternut Brook	Litchfield	265
Dog Pond Stream	Litchfield	265
Farmington River	New Hartford	7
Great Brook	New Milford	250
Hancock Brook	Plymouth	600
Ivy Mountain Brook	Goshen & Litchfield	250
Jake Brook	Goshen & Torrington	150
Kent Hollow Brook	New Milford	250
Milton Stream	Litchfield	270
Newfield Brook	Winchester & Torrington	400
Nigger Brook	Goshen	375
Sherman Brook	New Milford	250
Walker Brook	New Milford	250

**Middlesex County**

Boones Brook	Westbrook	450
Chatfield Hollow Brook	Killingworth	630
Fishing Brook	Saybrook	450
Great Brook	Chester	630
Green River	East Hampton	186
Muddy Gutter Brook	East Hampton	217
Westbrook Brook	Westbrook	450
Winthrop Brook	Deep River	720

**Tolland County**

Abbey Brook	Somers	200
Crystal Lake Brook	Stafford	150

Name of Water	Town	No. of Fish
Gillett's Brook	Somers	250
Gulf Stream	Somers	250
Hop River	Bolton & Andover	300
Kings Brook	Mansfield	200
Macht Brook	Columbia	200
Manager's Brook	Bolton & Andover	650
Meachams Brook	Tolland	250
Meadow Brook	Ellington	1,225
Middle River	Stafford	850
Skinner Brook	Andover	300
Skungamaug River	Tolland & Andover	1,300
Ten Mile River	Columbia	450
	Total	38,387

## FINGERLING BROWN TROUT

East Aspetuck River	New Milford	500
West Aspetuck River	New Milford	500
Bantam River, East Branch	Litchfield	600
Five Mile River	Killingly	2,100
Four Mile River	East Lyme & Lyme	1,000
Hockanum River	Rockville	3,718
Housatonic River	New Milford, Cornwall & Sharon	3,250
Indiantown Brook	Preston & Ledyard	1,000
Macedonia Brook	Kent	22,804
Meadow Brook	Colchester	800
Mianus River	Stamford	2,300
Naugatuck River, West Branch	Torrington, Thomaston & Water-town	1,200
Pease Brook	Bozrah & Lebanon	600
Pendleton Hill Brook	North Stonington	1,440
Roaring Brook	Glastonbury	750
Salmon River	Colchester & Hebron	19,662
Scantic River	East Windsor & Enfield	19,350
Shewtown Brook	Ledyard	840
Stony Brook	Suffield	1,000
Strawberry Meadow Brook	Windsor	1,050
Susquecunet River	Franklin & Lebanon	1,840
Towantic Brook	Oxford & Southbury	500
Town Farm Brook	New Milford	500
West River	Guilford	500
	Total	87,804

## ADULT BROWN TROUT

Eight Mile River	East Haddam	997
Farmington River	New Hartford	2,277
Hop Brook	Naugatuck & Middlebury	200
Housatonic River	New Milford, Cornwall & Sharon West	6,325
Long Meadow Brook	Naugatuck & Middlebury	400

Name of Water	Town	No. of Fish
Macedonia Brook	Kent	1,500
Salmon River	East Hampton	1,000
	Total	12,699

**Distribution in Waters on Which Fishing Rights Were Acquired  
Under Lease by the State**

**ADULT BROOK TROUT**

Blackberry River	Norfolk & North Canaan	11,033
Blackwells Brook	Brooklyn & Canterbury	2,921
Farmington River, West Branch	Colebrook & Barkhamsted	10,325
Fenton River	Willington & Mansfield	9,248
Mt. Hope River	Mansfield	2,450
Mt. Misery Brook (State Controlled)	Voluntown	6,499
Natchaug River	Eastford & Chaplin	10,235
Pequonnock River	Monroe & Trumbull	10,500
Pine River	East Wallingford & Clintonville	4,400
Pomperaug River	Woodbury & Southbury	8,425
Roaring Brook	Stafford & Willington	11,064
Salmon Brook, East Branch	Granby	3,010
Salmon Brook, West Branch	Granby	1,355
Sandy Brook	Colebrook	9,320
Shepaug River	Roxbury	10,257
Snake Meadow Brook	Killingly & Plainfield	15,391
Weekeepeemee River	Woodbury & Bethlehem	3,867
Wepawaug River	Orange & Milford	7,830
	Total	138,130

**ADULT BROWN TROUT**

Blackwells Brook	Brooklyn & Canterbury	6,877
Farmington River, West Branch	Colebrook & Barkhamsted	4,660
Pequonnock River	Monroe & Trumbull	2,847
Pine River	East Wallingford & Clintonville	1,000
Pomeraug River	Woodbury & Southbury	3,716
Shepaug River	Roxbury	4,000
Willimantic River	Willington & Coventry	9,118
	Total	32,218

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## FINGERLING BROOK TROUT

## Hartford County

Name of Water	Town	No. of Fish
Austins Brook	Suffield	1,480
Belcher Brook	Berlin	1,300
Big Brook	Avon	1,620
Birch Mt. Stream	Manchester	900
Buck Horn Brook	Enfield	900
Bunnell Brook	Burlington	2,430
Cannon Brook	Suffield	1,480
Chidsey's Brook	Avon	2,070
Cold Brook	Glastonbury	308
Cold Spring Brook	Rocky Hill	1,050
Creamery Brook	Granby	900
Creamery Brook	East Granby	308
Cushman Brook	Granby	2,060
Dark Hollow Brook	Glastonbury	1,350
Dayton Brook	Southington	3,400
DeGray's Brook	East Granby	1,788
Devines Brook	Suffield & East Granby	1,788
Dickinson Brook	Marlborough	1,500
Dry Brook	South Windsor	2,238
Freshwater Brook	Enfield	1,788
Granby Station Brook	East Granby	900
Grannis Pond Brook	Southington	800
Hyde Brook	Farmington	300
Jim's Brook	Canton	1,040
Judd River	Southington	2,640
Kendall Brook	Granby	225
Kennedy's Brook	Southington	2,050
Ketch Brook	East Windsor	1,208
Mill Brook	Windsor & Bloomfield	1,480
Mill Pond Brook	East Hartford	308
Misery Brook	Southington & Meriden	2,640
Mix Brook	Bristol	1,040
Morgan Brook	Granby	2,060
Nigger Brook	Canton	2,520
Perkins Brook	Bloomfield	1,490
Porter Brook	East Hartford	2,238
Roaring Brook	Glastonbury	312
Roaring Brook	Southington	800
Salmon Brook	Granby	4,000
Salmon Brook, West Branch	Granby & Hartland	3,300
Spencer Brook	Suffield	308
Stratton Brook	Simsbury & Canton	1,620
Thompson Brook	Avon	450
Tumble Brook	Bloomfield	1,030
Waterworks Brook	Windsor Locks	600
Welden Brook	Simsbury	1,620
Whittemore Brook	Suffield	1,788
Wiggin Brook	Avon	1,030
Wildcat Brook	Burlington	330

**New Haven County**

Name of Water	Town	No. of Fish
Bronson Brook	Beacon Falls	750
Eight Mile River	Oxford, Middlebury & Southbury	750
Five Mile Brook	Oxford	860
Jacks Brook	Oxford	860
Little River	Oxford & Seymour	750
Meeting House Brook	Meriden	3,580
Parker's Brook	Meriden	625
Pumping Station Brook	Meriden & Berlin	650
Rimmon Brook	Beacon Falls & Seymour	860
Six Mile Brook	Oxford	860
Sodom Brook	Meriden	625
Spruce Glen Brook	Meriden	7,160
Towantic Brook	Oxford	860
Willow Hill Brook	Meriden	4,230

**New London County**

Albert Allen Brook	Canterbury	1,326
Anguilla Brook	Stonington	3,122
Ayers Brook	Franklin	712
Bailey Brook	Franklin	50
Beaver Brook	Franklin & Sprague	2,198
Bindloss Brook	Groton	225
Blissville Brook	Lisbon & Canterbury	1,472
Daniel Brown Brook	Groton	1,125
Joe Clark Brook	Ledyard & Preston	1,015
Cold Brook	Franklin & Windham	1,105
Copp Brook	Stonington	1,878
Deep River	Lebanon & Bozrah	1,326
Denison Brook	Voluntown	1,800
Dickinson Brook	Colchester	1,960
Gold Mine Brook	Norwich	1,547
Havey Brook	Griswold & Plainfield	1,030
Hetchel Swamp Brook	North Stonington	1,522
Hunt Brook	Montville & Waterford	1,500
Kinnie Brook	Voluntown	3,045
Lamphere Brook	Stonington	675
Latimer Brook	East Lyme & Montville	3,077
Maguire Brook	Groton	1,319
Amasa Maine Brook	Preston	1,015
McCarthy Brook	Franklin	900
Meadow Brook	Colchester	2,300
Mineral Spring Brook	Bozrah	1,547
Mohegan Brook	Montville	824
Mountain Brook	Franklin	712
Mt. Misery Brook	Voluntown	2,341
Norwichtown Brook	Norwich	618
Palmer Brook	Griswold	1,105
Riel Brook	Sprague	206
River Farm Brook	Sprague	618
Shunock River	North Stonington	1,842
Stony Brook	Montville	1,886
Susquetonscut Brook	Lebanon & Franklin	2,492
Tadma Brook	Bozrah	824
Trading Cove Brook	Norwich, Montville & Bozrah	2,434

Name of Water	Town	No. of Fish
Whitford Brook	Stonington & Groton	490
Whittle Brook	Montville	412
Seth Williams Brooks	Groton	1,125
Woodmansee Brook	Griswold	1,105
Wyassup Brook	North Stonington	2,032
Yawbuck Brook	North Stonington	1,236

**Fairfield County**

Bates Brook	New Fairfield	1,060
Beaver Pond Brook	Huntington & Shelton	860
Cavanaugh's Brook	Newtown	1,396
Curtis Brook	Newtown	2,960
Deep Hollow Brook	New Fairfield	560
Eagan Brook	Newtown	1,164
East Swamp Brook	Bethel	320
Farmill River	Shelton	996
Farmill River, East Branch	Shelton & Huntington	1,075
Farmill River, West Branch	Shelton & Huntington	860
Farrar's Brook	Monroe & Trumbull	1,164
Great Plain Brook	Danbury	1,620
Greenwoods Brook	Sherman	2,180
Hanover Brook	Newtown	664
Hattertown Brook	Newtown & Monroe	1,796
Katz Pond Brook	Trumbull	1,264
Morgan Pond Brook	Newtown	1,484
Morrissey Brook	Sherman & New Milford	1,960
New Fairfield Stream	New Fairfield	500
Ondex Brook	Monroe	664
Otter Brook	Newtown	832
Pepper Crossing Brook	Monroe	1,464
Pequonnock River	Monroe	400
Pierson Brook	Newtown	1,000
Pond Brook	Newtown	1,828
Sand Hill Brook	Newtown	2,660
Saugatuck River	Weston & Redding	3,785
Scudder Brook	New Fairfield	560
Sharps Brook	Shelton, Monroe & Huntington	832
Shaw's Stream	Huntington, Shelton, Monroe & Newtown	1,075
Smith's Pond Brook	Monroe	400
Taylor Brook	Monroe	332
Titicus River	Ridgefield	1,000
Widow Ball's Brook	New Fairfield	560
Wild Cat Brook	Bethel	3,800

**Windham County**

Anderson Brook	Windham	500
Backwater Brook	Thompson	1,875
Baptist Brook	Thompson	1,875
Benham's Brook	Brooklyn	1,000
Bigelow River	Eastford	1,000
Blackmore Brook	Thompson	1,875
Bosworth's Brook	Pomfret	425
Bowling Alley Brook	Plainfield	365
Brickyard Brook	Brooklyn	1,000

Name of Water	Town	No. of Fish
Bungee Brook	Woodstock & Eastford	2,000
Carpenter Brook	Putnam	1,500
Cedar Swamp Brook	Sterling	500
Culvert Brook	Putnam	1,500
Ekonk Brook	Plainfield	3,420
Five Mile River	Thompson, Putnam & Killingly	1,000
Gorham Brook	Pomfret	700
Herindeen Brook	Woodstock	1,500
Horse Brook	Plainfield	2,225
Jordan Brook	Woodstock	1,500
Knowlton Brook	Ashford	500
Little River	Putnam & Woodstock	1,500
Little Dam Tavern Brook	Putnam	1,500
Long Branch Brook	Thompson	1,875
Lyon Brook	Pomfret & Woodstock	425
Mashamoquet Brook	Pomfret	695
Mashentuck Brook	Killingly	1,000
Mill Brook	Plainfield & Griswold	3,720
Moosup River	Sterling	1,030
Mt. Hope River	Ashford	1,000
Muddy Brook	Woodstock & Putnam	500
Nightingale Brook	Woodstock	425
North Woodstock Brook	Woodstock	1,500
Pine Brook	Brooklyn	1,000
Quaker Meetinghouse Brook	Pomfret	425
Quondock Brook	Sterling & Killingly	3,685
Rhodes Brook	Thompson	1,875
Robbins Brook	Thompson	1,875
Sap Tree Run Brook	Pomfret	625
Shelton Brook	Sterling & Plainfield	2,920
Still River	Eastford	500
Strout Brook	Thompson & North Grosvenor- dale	1,875
Weaver Brook	Woodstock	1,500
Wheaton Brook	Putnam & Thompson	1,500
White Brook	Pomfret & Brooklyn	1,000
Wolf Den Brook	Pomfret	625

#### Litchfield County

Dr. Allen Brook	Litchfield	1,200
West Aspetuck River	New Milford	800
Austin Brook	New Milford	800
Bee Brook	Washington	1,000
Blackberry River	Canaan & East Canaan	360
Buck Brook	New Milford	220
Buell Brook	Litchfield	400
Butternut Brook	Litchfield	400
Fenn Brook	Watertown	400
Gaylord Brook	New Milford	500
Gulf Brook	Torrington	400
Gunn Brook	Cornwall	500
Hall Meadow Brook	Torrington	900
Hancock Brook	Plymouth	2,000
Housatonic River	Sharon, Cornwall, Kent & Bridge- water	2,800
Ivy Mt. Brook	Litchfield	400

Name of Water	Town	No. of Fish
Jack's Brook	Roxbury	240
Kent Falls Brook	Kent	1,400
Lockwood Pond Brook	Watertown	400
Mad River	Winchester & Norfolk	1,800
Mallory Brook	Washington	500
Mason Brook	Washington & Litchfield	100
Mill River	Sharon	1,220
Milton Brook	Goshen & Litchfield	800
Moore Brook	Salisbury	720
Moose Horn Brook	Thomaston	800
Mt. Riga Brook	Salisbury	500
Mudge Pond Brook	Sharon	540
Naugatuck River, East Branch	Litchfield	800
Newfield Brook	Torrington & Winchester	3,700
Pine Swamp Brook	Cornwall	500
Pitch Brook	Morris & Litchfield	800
Pomperaug River	Woodbury	4,583
Ripley Brook	Litchfield	400
Roxbury Brook	Roxbury	240
Seely Brook	Litchfield	800
Shepaug River	Roxbury & Bridgewater	2,400
Spruce Brook	Litchfield & Torrington	800
Warren Brook	Warren	800
West Norfolk Brook	Norfolk	300
Wickwire Brook	South Canaan	360

#### Middlesex County

Ball Brook	Durham	1,773
Bible Rock Brook	Middletown & Haddam	1,773
Boones Brook	Westbrook	2,840
Candlewood Hill Brook	Haddam	1,800
Chatfield Hollow Brook	Killingworth & Clinton	1,960
Flat Brook	East Hampton	1,600
Fowlers Brook	Durham & Middletown	1,213
Great Brook	Chester	2,840
Green River	East Hampton	2,500
Hersig Brook	Durham	1,493
Muddy Gutter Brook	East Hampton	540
Parmelee Brook	Durham	1,773
Pine Brook	East Hampton	2,500
Ponsette Brook	Haddam	1,773
Roaring Brook	Haddam	1,960
Saltpeter Brook	Haddam	1,496
Wadsworth Brook	Durham	1,493
Westbrook Brook	Westbrook	2,840
White's Brook	Durham	1,773
Wilcox Brook	Portland	1,000
Winthrop Brook	Saybrook & Deep River	2,840

#### Tolland County

Abbey Brook	Somers & Ellington	2,200
Alden Brook	Stafford	900
Avery Brook	Somers	1,980
Bolton Pond Brook	Bolton	800
Cemetery Brook	Tolland	1,980

Name of Water	Town	No. of Fish
Charter's Brook	Tolland & Ellington	2,580
Clark's Brook	Vernon	880
Codfish Falls Brook	Mansfield & Willington	600
Conant Brook	Mansfield	900
Fenton River	Mansfield	1,000
Gillette's Brook	Somers	1,200
Ginger Brook	Stafford	500
Grapevine Brook	Tolland	1,485
Gulf Stream	Somers	1,920
Hop River	Bolton, Andover, Coventry & Col- umbia	4,435
Kalis Brook	Tolland	1,980
Kidder Brook	Mansfield	800
Kimball Brook	Ellington	2,280
Kings Brook	Mansfield	880
Larson Brook	Tolland	1,485
Macht Brook	Columbia	880
McIntrye Brook	Stafford	500
Meachams Brook	Tolland & Ellington	600
Meadow Brook	Ellington	3,240
Middle River	Stafford	500
Mitchell's Brook	Stafford	1,000
Pease Brook	Somers	800
Pecks Brook	Ellington	500
Pinney Brook	Ellington	500
Pleasant Valley Brook	Mansfield	800
Ruby Brook	Willington	880
Schnade Brook	Somers	1,980
Still Brook	Stafford	1,500
Tankerhoosan Brook	Vernon	8,064
Thrasher Brook	Somers	1,980
Tolland Reservoir Brook	Tolland	1,485
Town Farm Brook	Vernon & Tolland	1,320
Watchaug Brook	Somers	1,980
Willimantic River	Coventry & Mansfield	800
Woods Stream	Somers	1,980
	Total	401,645

### ADULT BROOK TROUT

#### Hartford County

Cherry Brook	Canton	1,400
Copper Mine Brook	Bristol	300
Farmington River, East Branch	Hartland	400
Grannis Pond Brook	Southington	300
Hatchery Brook	Berlin	695

#### New Haven County

Bladen Brook	Seymour	97
Branford River	North Branford & Branford	300
Eight Mile River	Southbury & Oxford	400
Hop Brook	Naugatuck & Middlebury	300
Little River	Seymour & Oxford	600
Neck River	Madison	300

Name of Water	Town	No. of Fish
West River	Woodbridge	350
West River	Guilford	350
Wharton Brook	Wallingford & North Haven	350

**New London County**

Anguilla Brook	Stonington	300
Beaver Brook	Franklin & Sprague	500
Beaver Brook	Lyme	150
Blissville Brook	Lisbon	550
Cranberry Meadow Brook	East Lyme	200
Fort Hill Brook	Groton	100
Gold Mine Brook	Norwich	200
Great Brook	Groton	100
Great Brook	Ledyard	100
Great Meadow Brook	Voluntown	250
Greene Brook	Waterford	150
Jordan Brook	Waterford	150
Lantern Hill Brook	Groton	75
Latimer Brook	East Lyme	675
Millers Pond Brook	Waterford	200
Stanley Morgan Brook	Waterford	150
Pecks Hollow Brook	Franklin	300
Raymond Brook	Montville	150
Salemtown Corner Brook	Salem	75
Sandy Brook	Montville	25
Saw Mill Brook	Groton	100
Shunoc River	North Stonington	500
Stoney Brook	Montville	400
Stony Brook	Waterford	25
Susquecunset Brook	Franklin	200
Trading Cove Brook	Montville & Norwich	450

**Fairfield County**

Boys Half Way River	Stevenson & Monroe	500
Cross Highway River	Fairfield	255
Farmill River	Shelton & Huntington	500
Gilbert Brook	Newtown	500
Lime Kiln Brook	Bethel	200
Mill River	Trumbull & Fairfield	300
New Fairfield Brook	New Fairfield	575
Pond Brook	Newtown	400
Pumpkin Brook	Stratford & Huntington	300
Saugatuck River, West Branch	Westport	200
Sterlie Brook	Bethel	200
Titicus River	Ridgefield	250

**Windham County**

Little River	Canterbury	300
Quondock Brook	Sterling	850

**Litchfield County**

East Aspetuck River	New Milford	300
West Aspetuck River	New Milford	300

Name of Water	Town	No. of Fish
Branch Brook	Watertown	360
Burton Brook	Salisbury	400
Hall Meadow Brook	Torrington & Winchester	300
Hancock Brook	Terryville & Plymouth	750
Nepaug River	New Hartford, Winchester & Torrington	500
Newfield Brook	Torrington & Winchester	300
North Kent Brook	Kent	600

**Middlesex County**

Beaver Brook	Haddam	261
Bible Rock Brook	Haddam & Middletown	400
Boones Brook	Westbrook	300
Chatfield Hollow Brook	Killingworth	300
Coginchaug River	Durham	1,100
Fishing Brook	Old Saybrook	210
Great Brook	Chester	560
Green River	East Hampton	300
Indian River	Clinton	350
Parmalee Brook	Durham	500
Ponsett Brook	Haddam	500
Reservoir Brook	Portland	350
Roaring Brook	Haddam	830
Salte Peter Brook	Haddam	300
Westbrook Brook	Westbrook	100
Winthrop Brook	Deep River	580

**Tolland County**

Chestnut Hill Brook	Columbia	200
Gilletts Brook	Somers	300
Gulf Stream	Somers	487
Hop River	Bolton & Andover	388
Kings Brook	Mansfield	300
Macht Brook	Columbia	300
Managers Brook	Bolton	300
Meacham Brook	Tolland	300
Middle River	Stafford	300
Pecks Brook	Ellington	300
Skinnners Brook	Andover	450
Skungamaug River	Tolland	800
Still River	Stafford	288
Tankerhoosen Brook	Vernon	800

33,811

**FINGERLING BROWN TROUT**

Bantam River	Bantam	1,000
Branch Brook	Thomaston, Litchfield & Watertown	600
Eight Mile River	Lyme	5,000
Five Mile River	Putnam & Killingly	2,550
Four Mile River	East Lyme	1,500
Hop Brook	Middlebury & Naugatuck	1,700

Name of Water	Town	No. of Fish
Indiantown Brook	Preston & Ledyard	400
Jeremy River	Colchester	500
Jordan Brook	Waterford	600
Kettle Brook	Windsor Locks	500
Long Meadow Brook	Naugatuck & Middlebury	600
Macedonia Brook	Kent	22,900
Meadow Brook	Colchester	500
Millers Pond Brook	Waterford	1,200
Oxoboxo Brook	Montville	900
Pease Brook	Lebanon	420
Pendleton Hill Brook	North Stonington	400
Roaring Brook	South Glastonbury	375
Salmon River Tributaries	Colchester & Hebron	24,000
Silex Mill Brook	North Stonington	210
Stony Brook	Suffield	375
Susquetonscut Brook	Franklin & Lebanon	420
Yantic River	Bozrah, Franklin & Norwich	290
	Total	66,940

**ADULT BROWN TROUT**

Branch Brook	Watertown	538
Eight Mile River	East Haddam	1,149
Farmington River	New Hartford	933
Hockanum River	Rockville	500
Mianus River	Stamford & Greenwich	150
Quinebaug River	Plainfield	500
Rippowam River	Stamford	200
Shetucket River	South Windham & Scotland	2,558
	Total	6,528

**Distribution in Waters on Which Fishing Rights Were Acquired  
Under Lease by the State**

**ADULT BROOK TROUT**

Blackberry River	Norfolk & North Canaan	15,074
Blackwell's Brook	Brooklyn & Canterbury	4,265
Farmington River, West Branch	Colebrook & Barkhamsted	9,385
Fenton River	Willington & Mansfield	12,768
Kinnie Brook	Voluntown	3,460
Meadow Brook	Ellington	4,479
Mill River	North Haven	2,064
Mt. Misery Brook (State Controlled)	Voluntown	3,851
Natchaug River	Eastford & Chaplin	13,976
Pequonnock River	Monroe & Trumbull	8,627
Pine River	East Wallingford & Clintonville	5,432
Quinnipiac River	Southington & Cheshire	4,027
Pomperaug River	Woodbury & Southbury	8,515
Roaring Brook	Stafford & Willington	9,311
Salmon River	East Hampton	157
Salmon Brook, East Branch	Granby	5,269
Sandy Brook	Colebrook	12,225
Shepaug River	Roxbury	7,540

Name of Water	Town	No. of Fish
Snake Meadow Brook	Killingly & Plainfield	10,223
Ten Mile River	Cheshire	1,533
Wepawaug River	Orange & Milford	5,989
	Total	148,170

**ADULT BROWN TROUT**

Blackwell's Brook	Brooklyn & Canterbury	2,831
Farm River	Northford & East Haven	3,341
Farmington River, West Branch	Colebrook & Barkhamsted	5,377
Housatonic River	Kent, New Milford, Cornwall & Sharon	7,413
Macedonia Brook	Kent	480
Norwalk River	Wilton	4,931
Pequonnock River	Monroe & Trumbull	2,662
Pine River	East Wallingford & Clintonville	890
Quinnipiac River	Southington & Cheshire	3,289
Pomperaug River	Woodbury & Southbury	4,327
Salmon River	East Hampton	2,726
Shepaug River	Roxbury	1,865
Willimantic River	Willington & Coventry	6,412
	Total	46,544

**ADULT RAINBOW TROUT**

Blackberry River	Norfolk & North Canaan	492
Farmington River, West Branch	Colebrook & Barkhamsted	1,054
Housatonic River	Kent, New Milford, Cornwall & Sharon	643
Norwalk River	Wilton	930
Pomperaug River	Woodbury & Southbury	500
Salmon River	East Hampton	775
Shepaug River	Roxbury	596
Willimantic River	Willington & Coventry	436
	Total	5,426

**DISTRIBUTION OF FISHES TO LAKES AND PONDS**

**SEASON OF 1931**

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bullheads	Sunfish	Shiners
Amos Lake .....	145	200		2,000			
Preston							
Alexander Lake .....	14	216	432		598		209
Killingly							
Ashland Pond .....				800			
Griswold							
Balls Pond .....	67				232		
New Fairfield							
Baltic Pond .....				1,600	800		
Sprague							
Bantam Lake .....	82	159	106	2,400	6,020	57,600	
Litchfield and Morris							
Beardsley Park Pond..	132	2,000		2,000	1,071	1,000	3,000
Brideport							
Beaver Pond .....	3	4,166			1,684		600
Meriden							
Lake Besick .....	24	2,047		300	2,150	285	409
Middlefield							
Big Pond .....	87	190	22		214		100
Windham							
Black Pond .....	135	4,818	208	175	2,338	160	248
Middlefield & Meriden							
Black Pond .....	16	103	16		242		200
Woodstock							
Black Hall Pond.....		533					
Old Lyme							
Black Rock Pond .....				500	4,800		
Watertown							
Bolton Ponds .....	19	3,147	9		420		150
Bolton							
Brass Mill Pond .....	108	214		12	300	5,000	
Torrington							
Brewster Pond .....	54				62		
Stratford							
Burr Pond .....	191	341		1,783	4,320	23,400	430
Torrington							
Candlewood Lake .....	111	4,078	993	4,080	2,479	2,000	8,000
New Fairfield & New Milford							
Cedar Lake .....	26	41			323	231	76
Chester							
Cedar Swamp Lake....	21	630	74	500	7,222	48,000	500
Bristol and Wolcott							
Cedar Swamp Pond....	13	246			198		175
Bolton							
Cherry Pond .....				900			1,000
Avon							
Clark's Falls Pond.....				400			
North Stonington							

Name of Water Stocked	Pickarel	Yellow Perch	Black Bass	Calico Bass	Bullheads	Sunfish	Shiners
Coe Brass Co. Pond... Torrington	17	49			3		
Columbia Lake .....	21	217	71		730		254
Columbia Cornwall Pond .....	5	47	39		3		
Cornwall Coventry or Waumgum- baug Lake .....	105	5,684	404	2,600	802	34,250	2,578
Coventry Cranberry Pond .....	205	1,106	25	920	300		1,000
Granby Cream Hill Pond .....	72	59			445		65
Cornwall Cromwell Quarry Hole. Cromwell	91	135			200	120	92
Crystal Lake .....	23	127	5		269		
Eastford Crystal Lake .....	10	289	9		69		150
Ellington Crystal Lake .....	28	1,121		180	489	48	400
Middletown Darrow Pond .....		627			52		
East Lyme Dodge Pond .....	70	723	10		60		
East Lyme Dog Pond .....	134	182	3		118		336
Goshen Dooley's Pond .....	87	1,045		200	518	87	328
Middletown Echo Lake .....	10	129	6		72		46
Mansfield Center Fitchville Pond .....					2,400		
Bozrah Gardner Lake .....	76	462	18	3,200	12		
Salem, Bozrah and Montville Glasgo Pond .....	64	252			4		
Griswold Gorton Pond .....		627		1,200	52		
East Lyme Great Hill Pond .....	87	1,823		145	519	115	755
Portland Green Falls Lake .....			12	44	1,600		
Voluntown Hall's Pond .....	11	87	15		96		158
Eastford Hamlin Pond .....		195			318		
Plainville Hanover Pond .....	7	997			711	62	350
Meriden Hartford Reservoir No. 4 Farmington	1,695	3,348		120	13	260	600

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bullheads	Sunfish	Shiners
Hatch Pond .....	98	87	63		188		
Kent							
Lake Hayward .....		3,000		3,500	1,000	2,000	5,500
East Haddam							
Highland Lake .....	.933	385	1,560	900	4,967	2,025	754
Winchester							
Hitchcock Lake .....	90	2,407	102	170	429		
Waterbury							
Horse Pond .....	132	10,442	42	2,150	94	2,400	406
Salem							
Housatonic Lake .....	65	760		1,500	325	500	400
Shelton and Derby							
Job's Pond .....	42	1,637		25	24	50	320
Portland							
Konolds Pond .....	175	394		105	33		
Woodbridge							
Lake Kenoshia .....	64				203		
Danbury							
Lakewood Pond .....		312	117				
Waterbury							
Lantern Hill Pond.....				800	1,600		
North Stonington and Ledyard							
Lee's Pond .....	102				227		
Westport							
Long Pond .....	66	132	12	400	1,614		
North Stonington and Ledyard							
Long Pond .....	81	92			437		86
Salisbury							
Long Meadow Pond....	106	1,539		84	394		400
Middlebury							
Marlboro Lake .....		269	28		22		
Marlboro							
Mashapaug Lake .....	18	234	5		204		125
Union							
Miller Pond .....		627			52		
Waterford							
Moosup Pond .....	11	221	8		276		100
Moosup							
Mt. Tom Pond .....	101	58		1,200	2,464		68
Litchfield, Morris and Washington							
Mudge Pond .....	61	94			69		
Sharon							
North Farms Reservoir	2	1,898			303		
Wallingford							
Nash's Pond .....	86				123		
Westport							
Occum Pond .....				1,213			
Norwich and Sprague							
Old Killingly Pond ....			375				
Killingly							

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bullheads	Sunfish	Shiners
Old Marsh Pond .....	5	240		1,200	3,180		7,200
Bristol and Plymouth							
Oxoboxo Pond .....	76	260	2	3,200	1,601		
Montville							
Pernachie Pond .....	79	1,192		234	536	145	515
Middletown							
Patagansett Lake .....	235	19,845	282	7,560	142	9,984	4,973
East Lyme							
Peat Works Pond .....	186	4,545		1,725	1,650	1,000	2,500
Berlin and Meriden							
Peck's Mill Pond .....	56				79		
Stratford							
Perry Ice Pond No. 1..		100			100		
New London							
Lake Phipps .....	91	297		30			
West Haven							
Lake Pocotopaug .....	5	6,401	932	3,000	1,306	700	2,300
East Hampton							
Poquonock Lake .....		627			52		
Groton							
Putnam Park Pond....	76				181		
Redding							
Lake Quassapaug .....	8	1,197	61		446		
Middlebury							
Lake Quonnipaug .....	52	4,400		4,400	617	2,000	4,000
North Guilford							
Rogers Lake .....	127	2,528	1	2,545	1,002	1,000	1,500
Lyme							
Rose's Pond .....	58	148		84	10		
Orange							
Samp Mortar Reservoir	197				490		
Fairfield							
Schofield Pond .....				800	800		
Montville							
Spaulding Pond .....				1,200			
North Stonington							
Staffordville Reservoir.	11	189			282		300
Staffordville							
Tadpole Pond .....				800	1,600		
Griswold							
Taunton Lake .....	129				217		
Newtown							
Tracy's Pond .....	7	184			10		
Waterbury							
Trading Cove Pond....		627			852		
Norwich and Montville							
Twin Lakes .....	187	475	1,040	1,000	5,286	48,000	275
Salisbury							
Tyler Pond .....	182	501	66		587		
Goshen							
Lake Waramaug .....				1,500	4,200		
Washington & Warren							

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bullheads	Shiners	Sunfish
Werkes Pond .....	25	26			14	33	20
Cromwell							
West Lake .....,.....	180	345		77	36		
North Branford							
West Hill Pond .....	14	505	115		35		
New Hartford							
Winnemaug Lake .....	15	96		14	187		
Watertown							
Wononscopomuc or							
Lakeville Lake ....	141	266	64		241		165
Lakeville & Salisbury							
Wood Creek .....				300	1,600		
Norfolk							
Wyassup Pond .....				800			
North Stonington							
Zoar Lake .....	96	3,145		5,050	1,000	2,250	3,000
Oxford							
Totals .....	8,537	115,187	7,352	73,625	88,715	244,705	57,116
Upper Basin.....	Northern Pike						
Windsor Locks	14						

## DISTRIBUTION OF FISHES TO LAKES AND PONDS

### SEASON OF 1932

Ball Pond .....				1,200	1,875		
New Fairfield							
Bantam Lake .....				3,200	3,000		
Morris and Litchfield							
Basham Lake .....	128	443					
East Haddam							
Beaver Pond .....	41	1,297		203	1,216		
Meriden							
Besick Lake .....	18	1,665		7,314	994		
Middlefield							
Black Pond .....	24	9,788	12 S.M.	14,225	3,976	8,000	17,000
Meriden & Middlefield							
Bolton Lake .....				3,200	2,000		1,000
Bolton							
Brass Mill Pond.....				800	300		
Torrington							
Burr Pond .....	126	85		7,500	805	14,400	500
Torrington							
Cedar Pond .....		400		3,600	2,000		3,000
Chester							
Cedar Swamp Lake....	97	313	4 S.M.		317		
Bristol							
Corner Pond .....				400	625		
New Fairfield and							
Danbury							

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bullheads	Sunfish	Shiners
Cranberry Pond .....	20	241	4 S.M.		252		
Granby							
Cromwell Quarry Hole. Cromwell	35		15 L.M.				
Crystal Lake .....				3,200	3,000		
Ellington							
Dooley Pond .....		15		3,500	18		
Middletown							
Gilbert & Bennett Pond Redding					1,250		
Glasgo Pond .....	138	357	2 L.M.			780	24
Griswold							
Grant Pond .....	2	1,781					
Franklin							
Great Hill Pond .....	49	594	20 S.M.	1,104	2,803	1,000	
Portland							
Hamlin Pond .....	52	289			1,107		
Plainville							
Hampton Reservoir ... Hampton				127	1,800		
Hanover Pond .....	85	698		81	2,028		
Meriden							
Hartford Reservoir No. 4 Farmington		6		47	200		50
Hatch Pond .....				1,200			
Kent							
Hitchcock Lake .....	17	1,320		45	325		60
Wolcott & Waterbury							
Housatonic Lake .....	95	150			525		
Derby							
Lake Kenoshia .....				800	1,875		
Danbury							
Konold's Pond .....	32	61			254		
Woodbridge							
Lakeville Lake .....				1,200	1,200		
Salisbury							
Lakewood Pond .....	20	1,363		62	364		
Waterbury							
Lee's Pond .....	12	1			1		
Westport		(White) 8					
Lenway's Pond .....	34	82			212		
Woodbridge							
Leonard Pond .....				1,200			
Kent							
Long Pond .....				1,200	1,200		
Salisbury							
Mamasasco Lake .....				1,200	1,875		
Ridgefield							
Marlboro Lake .....	220	339	4 S.M.		1,910		
Marlboro							
Moodus Reservoir .....	133	1,056	2 S.M.		20		92
East Haddam							

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bullheads	Sunfish	Shiners
Moose Hill Reservoir.. Oxford	81				600		
Mt. Tom Pond .....				7,000			500
Litchfield, Morris and Washington							
Mudge Pond .....				1,200	1,200		
Sharon							
North Farms Reservoir Wallingford	2	36		250	893		
Northampton Canal ... Plainville					1,000		
North Spectacle Pond.. Kent				2,400	3,000		
Old Killingly Pond .... Killingly	100	50			500		300
Old Marsh Pond .....	212	358			1,001	6,000	1,000
Bristol							
Old Reservoir .....	28	111			184		
West Haven							
Peat Works Pond..... Berlin	41	2,473		96	2,223		
Permachie Pond .....	19	94	7 L.M.	1,429	35		
Middletown							
Lake Phipps .....		10		5	10	13,000	5,000
West Haven							
Plants Pond .....		68			83		
Plantsville							
Lake Pocotopaug .....	70	634	57 S.M.	5,000	1,117		5,000
East Hampton							
Pond Hill Pond..... Norfolk		1,000		54			
Punch Brook .....					30		
Burlington							
Lake Quassapaug .....	10	52			78		
Middlebury							
Lake Quonnipaug .....	2,000				10,000	15,000	13,000
Guilford							
Rose's Pond .....	21	45			239		
Orange							
Sloper's Pond .....	6	22			30		
Southington							
South Spectacle Pond.. Kent				2,000	3,000		
Strong's Pond .....	24	83			124		
Woodbridge							
Taunton Lake .....				1,200	3,946		
Newtown							
Trading Cove Pond.... Norwich & Montville		150					
Walker's Reservoir .....		92			658		
Rockville							

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bullheads	Sunfish	Shiners
Lake Waramaug .....				3,200	3,000		
Washington, Warren and Kent							
Waumgumbaug or Coventry Lake .....						24,000	
Coventry							
West Hill Pond .....				3,000	4,200		1,000
New Hartford							
Wheeler Pond .....		650					
Montville							
Lake Winnemaug .....		95			2		1,500
Waterbury							
Wood Creek Pond .....				1,200	600		
Norfolk							
Zoar Lake .....	129	155			10,971		
Newtown							
Totals .....	4,121	28,520	103 S.M.	84,642	88,051	82,180	49,026
		(White) 8	24 L.M.				

## DISTRIBUTION OF YELLOW PERCH FRY

1931

## HARTFORD COUNTY

Name of Water	No. of Fry	Name of Water	No. of Fry
Arnolds Swamp Pond	200,000	Marsh Pond	100,000
Boggie Stowe Pond	200,000	Old City Pond	200,000
Broad Brook Pond	100,000	Old Marsh Pond	300,000
Burgess Pond	100,000	Peat Works Pond	200,000
Cannons Cove	200,000	Pine Point Pond	200,000
Cedar Swamp Lake	300,000	Plants Pond	100,000
Cherry Park Pond	200,000	Pleasant Valley Paper Mill Pond	100,000
Clark's Brick Yard Pond	100,000	Railroad Pond	100,000
Lake Compounce	500,000	Schwartz Pond	100,000
Daniels Cove	200,000	Spencer Pond	100,000
Devines Pond	100,000	Sperry's Pond	100,000
Diamond Lake	200,000	Spring or Town Farm Pond	100,000
Dorris Pond	100,000	Stiles & Reynolds or Clay Bank Pond	100,000
Freshwater Pond	100,000	White Oak Pond	100,000
Griswold Lake	100,000	Windsorville Pond	100,000
Hamlin Pond	600,000	Cranberry Pond	200,000
Hartford Reservoir No. 4	300,000		
Keeney Cove	9,700,000		
Little Pond	100,000		
Marlboro Lake	300,000		
		Total	15,900,000

## NEW HAVEN COUNTY

Beaver Pond	150,000	Phipp's Lake	400,000
Cedar Pond	150,000	Lake Quassapaug	500,000
Community Lake	300,000	Lake Quonnapaug	450,000
Hanover Lake	200,000	Simpson's Pond	150,000
Hitchcock Lake	400,000	Strongs Pond	150,000
Lake Housatonic	1,200,000	Tracy's Pond	200,000
Linsley Pond	350,000	West Pond	300,000
Long Meadow Pond	200,000	Zoar Lake	1,300,000
Moose Hill Pond	200,000		
North Farms Reservoir	150,000		
		Total	6,750,000

## NEW LONDON COUNTY

Amos Lake	200,000	Hallville Pond	100,000
Ashland Pond	100,000	Hopeville Pond	200,000
Aspinook Pond	200,000	Horse Pond	200,000
Avery Pond	100,000	Lantern Hill Pond	100,000
Baltic Pond	200,000	Long Pond	200,000
Beach Pond	200,000	Occum Pond	100,000
Big Pond	200,000	Oxoboxo Pond	200,000
Black Hall Pond	400,000	Paper Mill Pond	100,000
Clarks Falls Pond	100,000	Pataganset Lake	500,000
Dodge Pond	100,000	Roger's Lake	400,000
Exeter Pond	200,000	Spaulding Pond	100,000
Fitchville Pond	200,000	Tadman Pond	100,000
Gardner Lake	200,000	Tadpole Pond	200,000
Glasgo Pond	200,000	Trading Cove Pond	100,000
Gorton's Pond	100,000	Wheeler Pond	200,000
Grant Pond	100,000	Wyassup Lake	100,000
Green Falls Reservoir	200,000		
		Total	5,900,000

## FAIRFIELD COUNTY

Balls Pond	200,000	Mianus Pond	200,000
Bennetts Pond	100,000	Moriarty Pond	100,000
Bishops Mill Pond	100,000	Nash's Ice Pond	100,000
Brewsters Pond	200,000	Norwalk Reservoir	100,000
Button Shop Pond	100,000	Ondex Pond	100,000
Cogers Pond	100,000	Pecks Mill Pond	100,000

Name of Water	No. of Fry	Name of Water	No. of Fry
Curtiss Pond	200,000	Perry Mill Pond	100,000
Gilberts Pond	100,000	Putnam Park Pond	200,000
Mananasco Lake	400,000	Seeley Pond	100,000
Gilbert & Bennett Co. Pond	100,000	Taunton Pond	400,000
Great Pond	100,000	Warners Pond	200,000
Groupe Reservoir	500,000	Winnapauk Mill Pond	100,900
Lake Kenoshia	400,000		
Lees Pond	100,000		
Lockwoods Pond	100,000		
		Total	4,600,000

## WINDHAM COUNTY

Alexander's Lake	300,000	Killingly Pond	600,000
Appley's Pond	200,000	Little Pond	300,000
Bennetts Pond	200,000	Moosup Pond	400,000
Black Pond	300,000	North Windham Pond	200,000
Central Village Mill Pond	200,000	Oneco Pond	200,000
Chestnut Hill Reservoir	200,000	Packer Pond	200,000
Crystal Lake	600,000	Quadic Reservoir	300,000
Darling Pond	200,000	Quasset Pond	300,000
Edie Prey Pond	200,000	South Windham Pond	400,000
Fort Ned Pond	200,000	Sterling Mill Pond	200,000
Grosvenor-Dale Co.'s Pond	300,000	Woodstock Pond	600,000
Hall's Pond	400,000	Wrights Pond	100,000
Hampton Reservoir	600,000		
Kenyonville Pond	300,000		
		Total	8,000,000

## LITCHFIELD COUNTY

Bantam Lake	400,000	Park Pond	300,000
Burr Pond	600,000	Sand Dam Pond	200,000
Lake Candlewood	600,000	South Spectacle Lake	100,000
Cream Hill Pond	200,000	Tobey Pond	100,000
Dog Pond	200,000	Twin Lakes	600,000
Hatch Pond	200,000	Tyler Pond	200,000
Highland Lake	600,000	Lake Waramaug	400,000
Leonard Pond	100,000	Winchester Lake	600,000
Long Pond	300,000	Winnemauk Lake	200,000
Mt. Tom Pond	200,000	Wononscopomuc Lake	300,000
Mudge Pond	300,000	Wood Creek Pond	200,000
North Spectacle Pond	100,000		
		Total	7,000,000

## MIDDLESEX COUNTY

Bashan Lake	400,000	Essex North Cove	100,000
Beseck Lake	750,000	Great Hill Pond	550,000
Black Pond	650,000	Hayward Lake	300,000
Bushnell Pond	300,000	Jobs Pond	400,000
Cedar Lake	400,000	Moodus Reservoir	400,000
Centerbrook Cove	100,000	Permachie Pond	600,000
Chester Cove	200,000	Lake Pocotopaug	750,000
Clark's Reservoir	200,000	Pratt & Reed Reservoir	300,000
Crystal Lake	750,000	Rogers Pond	300,000
Dooley's Pond	750,000		
		Total	8,200,000

## TOLLAND COUNTY

Bigelow Pond	300,000	Orcuttville Pond	200,000
Bolton Lakes	400,000	Rhode Island Pond	200,000
Bolton Notch Pond	300,000	Somersville Mill Pond	200,000
Breakneck Pond	200,000	Staffordville Reservoir	300,000
Case's Pond	100,000	State Line Pond	300,000
Columbia Lake	400,000	Talcottville Pond	100,000
Coventry Lake	700,000	Tin Bridge Pond	100,000
Crystal Lake	400,000	Tolland Marsh Pond	200,000
Eagleville Pond	200,000	Town Pond	100,000
Flood Pond	100,000	Walker Reservoir	300,000
Forestville Pond	100,000	Woods Ice Pond	100,000
Mashapaug Lake	300,000		
New City Pond	300,000		
		Total	5,800,000

A total of 62,150,000 perch fry was put into 206 lakes and ponds.

1932

HARTFORD COUNTY

Name of Water	No. of Fry	Name of Water	No. of Fry
Arnolds Swamp Pond	150,000	Marlboro Lake	200,000
Boggie Stowe Pond	100,000	Marsh Pond	300,000
Burgess Pond	150,000	Oil City Pond	300,000
Cedar Swamp Lake	150,000	Old Marsh Pond	300,000
Cherry Park Pond	150,000	Pine Point Pond	200,000
Clark's Brick Yard Pond	150,000	Plants Pond	150,000
Lake Compounce	300,000	Pleasant Valley Paper Mill Pond	200,000
Cranberry Pond	300,000	Railroad Pond	100,000
Daniels Cove	300,000	Schwartz Pond	200,000
Devines Pond	300,000	Spencer Pond	100,000
Diamond Lake	200,000	Sperry's Pond	200,000
Doors Pond	150,000	Spring or Town Farm Pond	150,000
Freshwater Pond	200,000	Stiles & Reynolds or Clay Bank Pond	150,000
Griswold Lake	200,000	White Oak Pond	150,000
Hamlin or State Pond	150,000	Windsorville Pond	100,000
Hartford Reservoir No. 4	450,000		
Keeney Cove	6,300,000		
Little Pond	200,000		
		Total	12,700,000

NEW HAVEN COUNTY

Beaver Pond	150,000	North Farms Reservoir	150,000
Cedar Pond	150,000	Lake Phipps	150,000
Community Lake	150,000	Lake Quassapaug	300,000
Hanover Lake	150,000	Lake Quonnipaug	300,000
Hitchcock Lake	300,000	Simpson's Pond	150,000
Linsley Pond	150,000	Tracy's Pond	150,000
Long Meadow Pond	300,000	West Pond	300,000
Moose Hill Pond	150,000		
		Total	3,000,000

NEW LONDON COUNTY

Amos Lake	600,000	Hopeville Pond	600,000
Ashland Pond	600,000	Horse Pond	300,000
Aspinook Pond	600,000	Kent Pond	600,000
Avery Pond	600,000	Lantern Hill Pond	700,000
Bailey's Pond	600,000	Locke Pond	300,000
Baltic Pond	2,100,000	Long Pond	1,100,000
Beach Pond	1,400,000	Norwich Falls Pond	300,000
Beachdale Pond	400,000	Occum Pond	400,000
Big Pond	400,000	Oxoboxo Pond	600,000
Black Hall Pond	600,000	Palmer Pond	300,000
Blissville Pond	600,000	Paper Mill Pond	300,000
Carroll Reservoir	600,000	Pataganset Lake	500,000
Clarks Falls Pond	500,000	Pickerel Lake	500,000
Crystal Lake	600,000	Powers Lake	1,650,000
Darrow Pond	300,000	Ripley Parks Pond	500,000
Dodge Pond	600,000	Roger's Lake	1,800,000
Donahue Pond	300,000	Scholfield Pond	300,000
Exeter Pond	1,150,000	Spaulding Pond	600,000
Fitchville Pond	600,000	State Hospital Pond	300,000
Gardner Lake	900,000	Tadma Pond	300,000
Glasco Pond	700,000	Tadpole Pond	400,000
Gorton Pond	700,000	Taftville Pond	650,000
Grant Pond	100,000	Trading Cove Pond	300,000
Green Falls Reservoir	800,000	Wheeler Pond	300,000
Greenville Pond	650,000	Wyassup Lake	400,000
Hallville Pond	600,000		
Hinckley Pond	300,000		
		Total	32,100,000

FAIRFIELD COUNTY

Ball's Pond	200,000	Lec's Pond	100,000
Beardsley Park Reservoir	300,000	Mananasco Lake	400,000
Bennett's Pond	100,000	Mianus Pond	200,000
Bishops Mill Pond	100,000	Morgan Pond	100,000
Brewster's Pond	100,000	Moriarty Pond	100,000
Button Shop Pond	100,000	Nash's Ice Pond	100,000

Name of Water	No. of Fry	Name of Water	No. of Fry
Candlewood Lake .....	2,800,000	Norwalk Reservoir .....	1,000,000
Chasmers Pond .....	100,000	Ondex Pond .....	100,000
Cogers Pond .....	100,000	Peck's Mill Pond .....	100,000
Corner Pond .....	100,000	Seeley's Pond .....	100,000
Curtiss Pond .....	100,000	Taunton Pond .....	400,000
Gilbert & Bennett Co. Pond ..	400,000	Warner's Pond .....	100,000
Gregory Pond .....	100,000	Winnipauk Mill Pond .....	100,000
Groupe Reservoir .....	800,000	Zoar Lake .....	600,000
Lake Housatonic .....	500,000		
Lake Kenoshia .....	400,000		
		<b>Total</b>	<b>9,800,000</b>

## WINDHAM COUNTY

Alexander's Lake .....	200,000	Little Pond .....	300,000
Bennetts Pond .....	150,000	Moosup Pond .....	300,000
Black Pond .....	300,000	North Windham Pond .....	200,000
Central Village Mill Pond ..	100,000	Oneco Pond .....	100,000
Crystal Lake .....	600,000	Packer Pond .....	150,000
Darling Pond .....	100,000	Prince's Pond .....	100,000
Evans Pond .....	100,000	Quadic Reservoir .....	300,000
Fort Ned Pond .....	150,000	Quasset Pond .....	300,000
Goodyear Co. Pond .....	100,000	South Windham Pond .....	300,000
Grosvenor-Dale Co.'s Pond ..	200,000	Sterling Mill Pond .....	100,000
Hall's Pond .....	400,000	Woodstock Pond .....	300,000
Hampton Reservoir .....	300,000	Wrights Pond .....	150,000
Kenyonville Pond .....	200,000		
Killingly Pond .....	500,000		
		<b>Total</b>	<b>6,000,000</b>

## LITCHFIELD COUNTY

Bantam Lake .....	1,000,000	Park Pond .....	100,000
Burr Pond .....	100,000	Sand Dam Pond .....	100,000
Cream Hill Pond .....	100,000	South Spectacle Lake .....	100,000
Dog Pond .....	100,000	Tobey Pond .....	100,000
Hatch Pond .....	200,000	Twin Lakes .....	1,000,000
Highland Lake .....	800,000	Tyler Pond .....	100,000
Leonard Pond .....	100,000	Lake Waramaug .....	900,000
Long Pond or Wanonpakook Lake .....	100,000	Winnemauug Lake .....	100,000
Mt. Tom Pond .....	100,000	Wononscopomuc Lake .....	100,000
Mudge Pond .....	500,000	Wood Creek Pond .....	100,000
North Spectacle Pond .....	200,000		
		<b>Total</b>	<b>6,000,000</b>

## MIDDLESEX COUNTY

Bashan Lake .....	750,000	Hayward Lake .....	600,000
Beseck Lake .....	750,000	Jobs Pond .....	750,000
Black Pond .....	1,000,000	Moodus Reservoir .....	750,000
Bushnell Pond .....	600,000	Permachie Pond .....	750,000
Cedar Lake .....	600,000	Lake Pocotopaug .....	5,000,000
Crystal Lake .....	450,000	Pratt & Reed Reservoir .....	600,000
Dooley's Pond .....	750,000	Rogers Pond .....	600,000
Great Hill Pond .....	750,000		
		<b>Total</b>	<b>14,700,000</b>

## TOLLAND COUNTY

Bigelow Pond .....	200,000	Mashapaug Lake .....	400,000
Bolton Lakes .....	600,000	Moulton Pond .....	200,000
Bolton Notch Pond .....	200,000	Orcuttville Pond .....	400,000
Cases Pond .....	200,000	Rhode Island Pond .....	200,000
Columbia Lake .....	400,000	Somerville Mill Pond .....	200,000
Coventry Lake .....	600,000	Staffordville Reservoir .....	400,000
Crystal Lake .....	200,000	State Line Pond .....	400,000
Eagleville Pond .....	200,000	Talcottville Pond .....	200,000
Flood Pond .....	200,000	Tin Bridge Pond .....	200,000
Forestville Pond .....	200,000	Tolland Marsh Pond .....	200,000
		Walker's Reservoir .....	200,000
		<b>Total</b>	<b>6,000,000</b>

A total of 90,300,000 perch fry was put into 213 lakes and ponds.

**DISTRIBUTION OF SMELT FRY**

**1931**

NEW LONDON COUNTY			
Name of Water	No. of Fry	Name of Water	No. of Fry
Bakers Cove .....	1,000,000	Pawcatuck River .....	5,000,000
Mystic River .....	3,500,000	Quambaug Cove .....	500,000
Niantic River .....	1,000,000	Thames River .....	2,500,000
Palmers Cove .....	458,000		<hr/>
			13,958,000

FAIRFIELD COUNTY

Saugatuck River .....	5,625,000
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LITCHFIELD COUNTY

Twin Lakes .....	1,000,000
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TOLLAND COUNTY

Crystal Lake .....	500,000
Snipsic Lake .....	500,000

Total 1,000,000

**Total Fry Distributed—21,583,000.**

In addition to the above, 1,000 adult smelt were purchased and planted in Candlewood Lake in Fairfield County.

**1932**

NEW LONDON COUNTY

Mystic River .....	500,000	Quambaug Cove .....	82,000
Pawcatuck River .....	500,000		<hr/>
			1,082,000

FAIRFIELD COUNTY

Saugatuck River .....	8,525,000
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**Total Fry Distributed—9,607,000.**

**DISTRIBUTION OF BULLHEADS**

(Acquired by Purchase)

**1931**

HARTFORD COUNTY

Boggie Stowe Pond .....	650	Paper Goods Pond .....	325
Burgess Pond .....	325	Pleasant Valley Paper Mill	
Cherry Pond .....	650	Pond .....	650
Cranberry Pond .....	1,300	Railroad Pond .....	325
Daniels Cove .....	650	Schwartz Pond .....	650
Devines Pond .....	650	Spencer Pond .....	650
Diamond Lake .....	650	Sperrys Pond .....	650
Little Pond .....	650	Spring Pond .....	325
Malone's Pond .....	325	State Pond .....	650
Marsh Pond .....	650	Upper Basin .....	650
Merwin's Pond .....	650	White Oak Pond .....	325
Mill Pond .....	325	Windsorville Pond .....	1,300
Oil City Pond .....	650		<hr/>
Plant's Pond .....	650	Total	15,275

## NEW HAVEN COUNTY

Name of Water	No. of Fry	Name of Water	No. of Fry
Beaver Pond .....	650	North Farms Reservoir .....	650
Black Pond .....	1,300	Peat Works Pond .....	1,300
Cedar Pond .....	1,300	Phipps Lake .....	650
Community Lake .....	1,300	Lake Quonnipaug .....	1,300
Hanover Lake .....	650	West Pond .....	1,300
Linsley Pond .....	1,300	Konolds Pond .....	650
Little Black Pond .....	650		
		Total	13,000

## NEW LONDON COUNTY

Big Pond .....	1,950	Patagansett Lake .....	1,950
Dodge Pond .....	1,300	Roger Lake .....	2,600
Gorton Pond .....	1,300	Williams Pond .....	1,950
Hinckley Pond .....	650		
Horse Pond .....	1,300	Total	13,000

## FAIRFIELD COUNTY

Balls Pond .....	1,305	Nash Ice Pond .....	870
Bennetts Pond .....	870	Ondex Pond .....	870
Brewsters Pond .....	870	Peck's Mill Pond .....	870
Buttons Pond .....	870	Seeley's Pond .....	435
Curtiss Pond .....	1,305	South Norwalk Reservoir .....	1,305
Gilbert & Bennett Pond .....	870	Taunton Pond .....	1,740
Groupe Reservoir .....	870	Warner's Pond .....	1,305
Lake Kenoshia .....	2,175	Winnapaug Mill Pond .....	870
Lee's Pond .....	870		
Mamasasco Lake .....	2,175	Total	20,445

## WINDHAM COUNTY

Alexandria Lake .....	1,300	North Grosvenordale Pond ..	650
Big Pond .....	650	North Windham Pond .....	650
Black Pond .....	1,300	Old Killingly Pond .....	1,300
Central Village Mill Pond ..	650	Oneco Pond .....	650
Crystal Lake .....	1,950	Packer Pond .....	650
Darlings Pond .....	650	Prentise Pond .....	650
Evans Pond .....	650	Quassett Pond .....	1,300
Fort Ned Pond .....	650	Roseland Lake .....	1,950
Halls Pond .....	650	Schoolhouse Pond .....	1,300
Hampton Reservoir .....	1,300	Sterling Mill Pond .....	650
Hawes Pond .....	650	Willimantic River .....	650
Kenyons Pond .....	650		
Moosup Pond .....	1,300	Total	22,750

## LITCHFIELD COUNTY

Burr Pond .....	7,475
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## MIDDLESEX COUNTY

Bessick Lake .....	1,300	Permachie Pond .....	1,950
Bushnell Pond .....	1,950	Pratt & Reed Reservoir .....	1,950
Cedar Lake .....	1,950	Rogers Pond .....	1,950
Doolie's Pond .....	1,950		
		Total	13,000

## TOLLAND COUNTY

Bolton Lakes .....	2,535	New City Pond .....	845
Bolton Notch Pond .....	845	Orcuttville Pond .....	845
Columbia Lake .....	1,690	Somersville Pond .....	845
Coventry Lakes .....	1,690	Stafford Reservoir .....	1,270
Crystal Lake .....	1,266	State Line Pond .....	1,266
Eagleville Pond .....	845	Walkers Reservoir .....	845
Echo Lake .....	845		
Mashapaug Lake .....	1,268	Total	16,900

**Total Number of Bullheads Distributed—121,845.**

## DISTRIBUTION OF BULLHEADS

(Acquired by Purchase)

1932

## HARTFORD COUNTY

Name of Water	No. of Fry	Name of Water	No. of Fry
Arnold Pond .....	1,950	Plant's Pond .....	1,950
Cranberry Pond .....	2,600	Secret Lake .....	1,950
Hartford Reservoir No. 4 .....	1,950	State Pond .....	1,950
Marsh Pond .....	1,950		
Old Marsh Pond .....	1,950	Total	16,250

## NEW HAVEN COUNTY

Beaver Pond .....	1,300	Moose Hill Pond .....	1,300
Cedar Pond .....	1,300	North Farms Reservoir .....	1,300
Community Lake .....	1,300	Phipps Lake .....	1,300
Lake Housatonic .....	2,600	Lake Quonnipaug .....	2,600
Konold's Pond .....	1,300	West Pond .....	1,950
Linsley Pond .....	1,300	Lake Zoar .....	3,900
Long Meadow Pond .....	1,950	Total	23,400

## NEW LONDON COUNTY

Baltic Pond .....	1,550	Occum Pond .....	1,100
Beachdale Pond .....	1,100	Paper Mill Pond .....	1,100
Clarks' Falls Pond .....	1,100	Spaulding Pond .....	1,100
Grant Pond .....	1,100	Trading Cove Pond .....	1,100
Hallville Pond .....	1,100	Wheeler Pond .....	1,550
Lantern Hill Pond .....	1,100	Total	13,000

## WINDHAM COUNTY

Black Pond .....	1,625	Prentise Pond .....	650
Alexander's Lake .....	1,300	Quasset Pond .....	1,300
Crystal Pond .....	1,625	School House Pond .....	1,300
Hampton Reservoir .....	1,300	South Windham Pond .....	1,300
Moosup Pond .....	1,300	Total	13,000
Old Killingly Pond .....	1,300		

## MIDDLESEX COUNTY

Basham Lake .....	3,900	Toby's Pond .....	1,300
Cedar Lake .....	3,900	Total	13,000
Great Hill Pond .....	3,900		

## TOLLAND COUNTY

Coventry Lake .....	1,300	Columbia Lake .....	1,300
Walkers Reservoir .....	2,600	Bolton Pond .....	3,900
Echo Lake .....	1,300	Bolton Notch Pond .....	1,300
Crystal Lake .....	1,300	Total	13,000

**Total Number of Bullheads Distributed—91,650.**

## DISTRIBUTION OF SMALL-MOUTH BLACK BASS FRY 1931

HARTFORD COUNTY		No. of Fry	
Name of Water			
Cranberry Pond .....		1,000	
Marlboro Lake .....		1,000	
	Total	2,000	
NEW HAVEN COUNTY			
Quassapaug Lake .....		1,000	
Zoar Lake .....		1,000	
	Total	2,000	
NEW LONDON COUNTY			
Gardners Lake .....	2,000	Rogers Lake .....	1,000
Long Pond .....	1,500		
Oxoboxo Lake .....	1,000	Total	5,500
FAIRFIELD COUNTY			
Balls Pond .....	1,500	Candlewood Lake .....	3,000
Taunton Pond .....	1,500		
		Total	6,000
WINDHAM COUNTY			
Alexanders Lake .....		500	
Old Killingly Reservoir .....		500	
	Total	1,000	
LITCHFIELD COUNTY			
Bantam Lake .....	1,000	Waramaug Lake .....	1,000
Mount Tom Lake .....	1,500	Wononscopomuc Lake .....	1,000
Spectacle Lake-North .....	1,000		
Twin Lakes .....	2,000	Total	7,500
MIDDLESEX COUNTY			
Hayward Lake .....		500	
Pocotopaug Lake .....		2,000	
	Total	2,500	
TOLLAND COUNTY			
Crystal Lake .....	1,000	Snipsic Lake .....	1,000
Columbia Lake .....	1,000		
Coventry Lake .....	1,000	Total	4,000

**Total Small-mouth Black Bass Distributed—30,500.**

## 1932

40,000 Small-mouth Black Bass Fry were taken from Wangum Reservoir and planted in Twin Lakes.

## DISTRIBUTION OF PHEASANTS

	Spring of 1931	Fall of 1931
Hartford County .....	204	2,332
New Haven County .....	179	1,970
New London County .....	196	2,077
Fairfield County .....	209	2,185
Windham County .....	197	2,048
Litchfield County .....	197	2,009
Middlesex County .....	195	2,057
Tolland County .....	199	2,094
Totals .....	1,576	16,772

	Spring of 1932	Fall of 1932
Hartford County .....	921	1,994
New Haven County .....	781	2,000
New London County .....	848	2,004
Fairfield County .....	880	2,012
Windham County .....	846	2,000
Litchfield County .....	863	2,242
Middlesex County .....	881	2,000
Tolland County .....	870	2,034
Totals .....	6,890	16,286

**SUMMARY OF  
SALE OF ANGLING AND HUNTING LICENSES  
FOR THE YEAR 1930**

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping	Resident Trapping (Minors)	Non-Resident Angling	Non-Resident Hunting	Non-Resident Combination	Non-Resident Property Owners
Hartford .....	7,654	3,926	2,338	324	160	382	40	18	135
New Haven .....	5,958	4,422	1,995	270	81	255	24	2	127
New London .....	1,779	1,505	640	259	39	182	44	6	70
Fairfield .....	4,381	4,759	1,674	244	93	309	138	19	92
Windham .....	1,285	852	495	210	24	215	42	9	43
Litchfield .....	3,845	1,941	1,404	275	54	418	72	9	151
Middlesex .....	725	1,094	427	216	82	75	30	3	24
Tolland .....	1,012	586	407	100	33	120	23	6	36
Totals .....	26,639	19,085	9,380	1,898	566	1,956	413	72	678

**SUMMARY OF  
SALE OF ANGLING AND HUNTING LICENSES  
FOR THE YEAR 1931**

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping	Resident Trapping (Minors)	Non-Resident Angling	Non-Resident Hunting	Non-Resident Combination	Non-Resident Property Owners
Hartford .....	7,276	4,167	2,153	225	80	265	22	12	128
New Haven .....	5,928	4,762	1,771	170	55	208	21	2	114
New London .....	1,669	1,758	594	187	26	137	46	6	83
Fairfield .....	4,365	4,896	1,526	184	50	293	119	6	115
Windham .....	1,353	992	427	157	25	189	48	4	45
Litchfield .....	3,958	2,157	1,309	207	31	406	58	8	157
Middlesex .....	764	1,195	383	154	34	60	14	0	18
Tolland .....	997	724	383	67	17	103	22	3	38
Totals .....	26,310	20,651	8,546	1,351	318	1,661	350	41	698

Lists of licensed fur dealers, bait dealers, game breeders or taxidermists will be furnished on request at the Hartford office.

**ARRESTS FOR VIOLATIONS OF THE  
FISH AND GAME LAWS**

July 1, 1930 — June 30, 1932

County	Violations of Fish Laws	Violations of Game Laws	Total Violations	Total Convictions	Fines	Costs	Total Fines and Costs
Hartford .....	116	118	234	227	\$ 1,479.35	\$ 2,403.78	\$ 3,883.13
New Haven ....	104	95	199	197	692.00	2,058.76	2,750.76
New London ...	121	96	217	207	819.00	2,206.49	3,025.49
Fairfield .....	133	128	261	256	1,337.35	2,670.02	4,007.37
Windham .....	52	73	125	122	1,065.60	1,189.94	2,255.54
Litchfield .....	137	154	291	283	2,900.00	3,854.12	6,754.12
Middlesex .....	145	110	255	252	1,317.00	2,876.95	4,193.95
Tolland .....	31	82	113	111	619.00	1,222.33	1,841.33
Totals .....	839	856	1,695	1,655	\$10,229.30	\$18,482.39	\$28,711.69

**DEER KILLED JULY 1st, 1930, TO JUNE 30th, 1931**

County	Accident	Trains	Dogs	Autos	Destroying Property	Found Injured	Cause Unknown	Killed Illegally	Total
Hartford ....			1	4	3	1	1		10
New Haven..		3	1	5	3	4	1	2	19
New London.	2	3	3	13	68	4	1	6	100
Fairfield ....	3	1	3	15	5	7	1	4	39
Windham ...			1	3	58	1	3	5	71
Litchfield ...	7		11	18	27	9	2	5	79
Middlesex ...		1		3	4		1	4	13
Tolland .....	1	1	2	5	34	2	1		46
	<u>13</u>	<u>9</u>	<u>22</u>	<u>66</u>	<u>202</u>	<u>28</u>	<u>11</u>	<u>26</u>	<u>377</u>

**DEER KILLED JULY 1st, 1931, TO JUNE 30th, 1932**

County	Accident	Trains	Dogs	Autos	Destroying Property	Found Injured	Cause Unknown	Killed Illegally	Total
Hartford ....	1		1	3	4	1	1	2	13
New Haven..	1	1		10	5	2		3	22
New London.	1	5	3	4	22	1	1	1	38
Fairfield ....	2		3	20	18	3	5	3	54
Windham ...		1	3	6	61	2	4	7	84
Litchfield ...	5	1	6	15	24	5	2	8	66
Middlesex ...			1	7	4	1	2	2	17
Tolland .....			2	12	24			1	39
	<u>10</u>	<u>8</u>	<u>19</u>	<u>77</u>	<u>162</u>	<u>15</u>	<u>15</u>	<u>27</u>	<u>333</u>

## GAME CENSUS

## BIRDS

	1927	1928	1929	1930
Brant .....	10	52	72	52
Ducks .....	14,845	13,819	17,487	14,223
Gallinules .....	43	44	29	10
Geese .....	114	48	40	61
Mudhens .....	233	139	147	131
Pheasants .....	20,415	19,828	21,362	23,341
Rail .....	2,470	1,665	2,694	4,551
Ruffed Grouse ....	14,905	5,587		10,706
Wilson's Snipe ....	171	78	165	215
Woodcock .....	13,661	13,942	13,458	16,964
Value .....	\$219,256.00	\$167,083.50	\$155,324.50	\$202,117.00

## QUADRUPEDS

	1927	1928	1929	1930
Bobcat .....	49	12	64	29
Fox .....	2,917	2,586	2,304	2,084
Hares .....	585	411	453	600
Lynx .....	19	3	25	2
Mink .....	872	814	860	511
Muskrat .....	18,796	27,026	17,566	11,524
Otter .....	68	27	35	57
Rabbits .....	43,701	38,879	46,915	58,100
Raccoon .....	2,721	3,248	3,431	3,024
Skunks .....	10,522	10,546	8,320	5,386
Squirrels .....	52,434	22,645	21,031	29,397
Weasel .....	955	897	1,193	579
Value .....	\$195,408.50	\$187,370.70	\$170,312.80	\$150,986.40
Percentage of hunters reporting ....	54.2%	50.8%	52.3%	42.9%

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State of Connecticut

TWENTIETH BIENNIAL REPORT

OF THE

STATE BOARD

OF

FISHERIES AND GAME

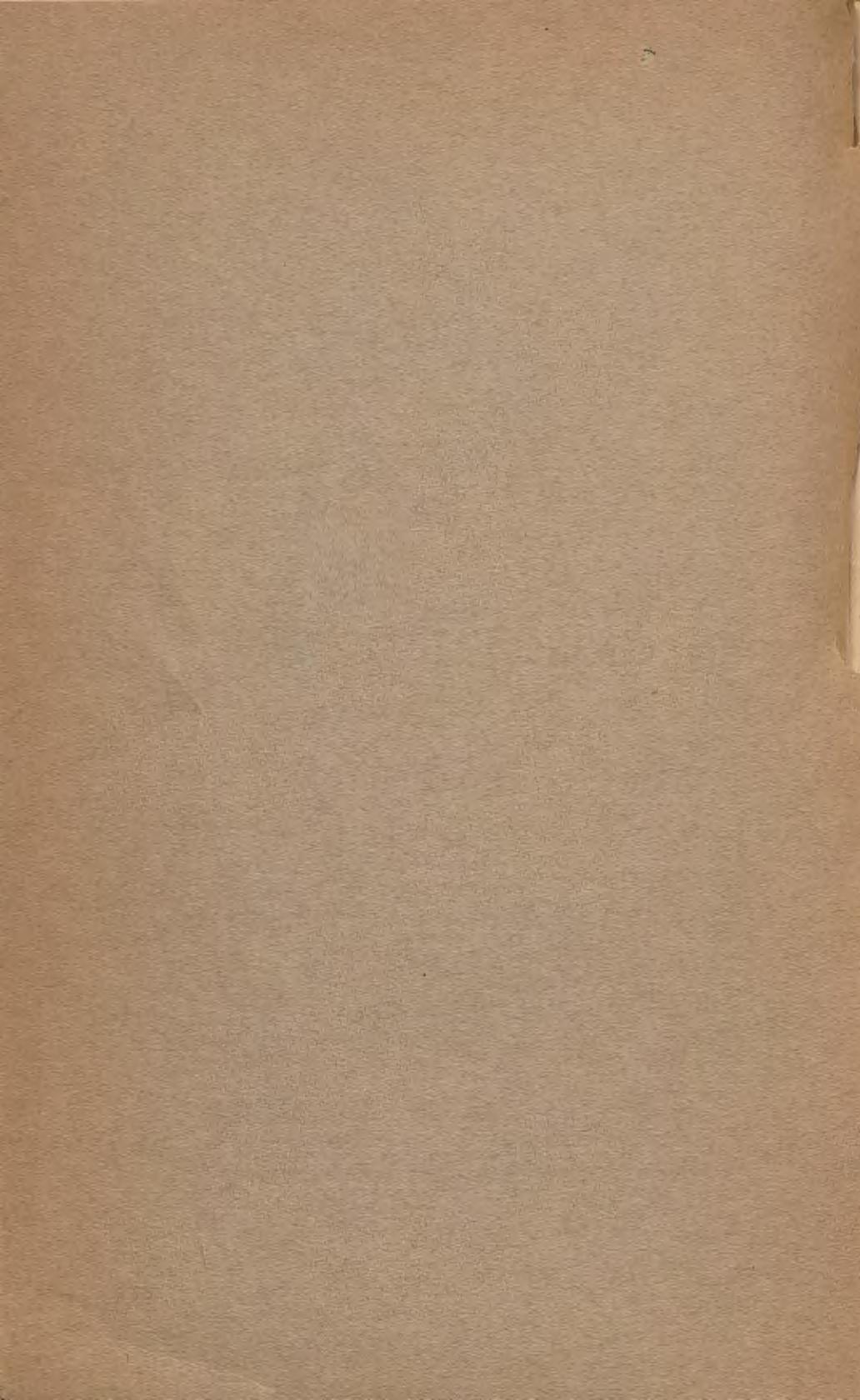
FOR THE YEARS

1932-34

TO

HIS EXCELLENCY, THE GOVERNOR  
AND THE GENERAL ASSEMBLY





State of Connecticut

PUBLIC DOCUMENT No. 19

**TWENTIETH BIENNIAL REPORT**

OF THE

**STATE BOARD**

OF

**FISHERIES AND GAME**

FOR THE YEARS

**1932-34**

TO

**HIS EXCELLENCY, THE GOVERNOR  
AND THE GENERAL ASSEMBLY**

HARTFORD

PUBLISHED BY THE STATE

1934

PUBLICATION  
APPROVED BY  
THE BOARD OF FINANCE AND CONTROL

TO HIS EXCELLENCY, WILBUR L. CROSS,  
*Governor of Connecticut,*  
*Executive Chambers,*  
*Hartford, Connecticut.*

SIR:

The Commissioners of the State Board of Fisheries and Game submit herewith the twentieth biennial report of the activities of this Department for the two years ending June 30th, 1934.

During the period covered by this report more progress has been made in the restoration of our wildlife than in any other similar period due to the cooperation of the National Government through CWA, FERA, and CCC, of the various state departments, particularly Forests and Parks, and of farmers, sportsmen, nature lovers and citizens generally, all of whom are more alive to the necessity for the planned restoration of land and wildlife resources than ever before.

It is regrettable that we shall have to use part of our surplus to cover costs heretofore covered by appropriations and thus spend license money for expenses properly chargeable to the general fund.

The failure of the last Legislature to grant the Commission discretionary power in the matter of seasons, bag and creel limits has been a serious handicap and prevented our giving the people extended recreational opportunities especially in angling.

The formation of a State-wide Nature League under the auspices of the Commission is a distinct step forward affording as it does those not interested in hunting an opportunity to coordinate their efforts and assist in the restoration of our wildlife, with special emphasis on song and insectivorous birds and other non-game species.

We sincerely hope that the next Legislature will find it wise to grant us funds and authority to continue our work on a better and broader scale, for it is now generally conceded that the restoration of wildlife is essential to man's progress and means the restoration of much land and water now worthless, protection against the ravages of erosion, drought and floods as well as the control of destructive insects now taking such a fearful toll.

We hope that this report may serve the threefold purpose of reporting the progress of this Department, explaining the policies and procedures which have been adopted and suggesting practical methods of wildlife restoration which may be employed by the many individuals who are anxious to cooperate if given encouragement and direction.

Respectfully submitted,

THOS. H. BECK, *Chairman,*  
CHAS. F. GRIFFIN,  
JAMES G. HAMMOND.

TO THE COMMISSIONERS  
STATE BOARD OF FISHERIES AND GAME:

I have the honor to submit herewith a report of the administration of the duties imposed upon me by law, subject to your advice and approval, and of the programs and activities of the several divisions in this Department for the biennial term ending June 30, 1934. In the distribution of fish and game, however, the report covers the two calendar years ending December 31, 1934.

I wish to take this opportunity to express my appreciation of the time and attention which the Commissioners have given so freely in determining policies and programs for the Department and of the cooperation and the services rendered by the entire personnel of the Department.

Since many changes of policy and many new programs have been inaugurated during this biennium, a brief summary of the activities and accomplishments of the Department has been supplemented by a more detailed treatment of the new policies and programs under separate headings.

Respectfully submitted,

ARTHUR L. CLARK, *Superintendent.*

Hartford, Conn., December 1, 1934.

## REPORT OF PROGRESS ON THE SIX-YEAR PROGRAM

### 1. To Improve and Increase the Contacts and Cooperation Between the Board and the Sportsmen, Farmers and Game Breeders of the State.

The Advisory Council, composed of two sportsmen delegates from each county, has held monthly meetings with the Board. During the summer months the Council meetings have been held in connection with field trips to inspect the more important projects directed by the Board.

An organization of Game Guardians has been perfected. This is composed of individual sportsmen from all parts of the state who have volunteered active cooperation with our warden service in all of their duties.

Many farmers and other rural property owners now enjoy the cooperation of this Department in regulating hunting or fishing on their properties so as to avoid the damage and abuse which often result from unregulated public use of private lands.

The game breeding industry has been aided by the adoption of definite standards of quality and sanitation proposed by this Department. Game breeders who conform to these standards and come under our general supervision have a distinct advantage over the game breeders in any other state, particularly in the sale of birds to private individuals. The adoption of standards has resulted also in furnishing this Department with game birds of the highest quality and most suitable for liberation. Further contacts with game breeders are maintained through inspection of game farms and the purchase of game birds under our policy which gives preference to Connecticut game breeders, other factors being equal.

Representatives of the Department have attended many meetings of sportsmen's clubs, civic organizations, rural groups and boys' clubs. The activities and policies of the Department have been explained and the cooperation of individuals and groups solicited.

### 2. To Provide for an Adequate Educational Campaign on Real Conservation, Particularly Among School Children.

The Connecticut State Nature League, sponsored by this Department, has been successfully organized to represent those who are interested in the conservation of all natural resources.

A nature trail has been constructed and marked by the CCC at our Shade Swamp Sanctuary in Farmington. Exhibits, including live native birds and mammals, have been placed along the trail which is open to the public during daylight hours. The number of visitors to this area is increasing rapidly. Many school children, boy scouts and similar groups have taken advantage of the outdoor nature exhibits.

During the summer of 1934, a student at the Connecticut State College, Storrs, was employed as a Nature Guide at our Shade Swamp Sanctuary through the cooperation of the Connecticut Forest and Park Association.



Deer and Red Fox in the Fish and Game Exhibit.

The Fish and Game Exhibit at the State Grange Exposition, State Armory, Hartford, 1934, included all of the important species of game birds, quadrupeds and predators in Connecticut in their natural environments and relationships.

Appropriations are needed to carry on such educational work.



100,000 People Saw This Exhibit During the National Grange Convention, Hartford, 1934.

During this period, from June 15th to September 1st, six hundred and eighty-seven visitors were recorded at the sanctuary.

Educational exhibits placed at appropriate fairs have proven extremely popular and helpful. Many requests for such exhibits have had to be denied during the current year because of lack of appropriations.

A collection of maps, charts and photographs has been prepared by the Department with the assistance of the FERA. These are of great practical value in illustrating the work of the Department and in planning activities for the future. They will be used in exhibitions when funds are made available for an educational program.

### 3. To Institute Game Breeding and Management Courses at the State College at Storrs.

The courses in wildlife conservation inaugurated by the State College three years ago under the direction of Professor A. E. Moss, Department of Forestry, have been continued and extended with excellent results. We acknowledge our appreciation of the cooperation accorded by the State College in spite of the fact that no appropriations were made for this valuable work. Several graduates and students have found employment in this Department and in the CCC and have rendered intelligent services because of their training. Investigations of game bird diseases have been carried on by Dr. Erwin Jungherr, Pathologist, State College Extension Service.

### 4. To Increase the Staff of Wardens

Legislation authorizing an increase in the staff of wardens failed of enactment.

A volunteer service of Game Guardians has been very effective in encouraging a better observance of fish and game laws.

The establishment of regulated shooting areas has permitted the employment of special patrolmen on those areas, which has increased the effectiveness of our warden service during the shooting season.

### 5. To Provide Systematic Predator Control

Snapping turtles weighing 51,028 pounds have been trapped during the summers of 1933 and 1934. This will substantially increase the supply of pond fishes, muskrats and ducks on which these turtles feed. Although snapping turtles have a market value as food they were disposed of without cost, mostly to needy families.

The warden service has given special attention to the control of stray, homeless cats which have reverted to the wild state. During the biennium, our warden service alone has disposed of 2,408 such feral cats taken on strictly wild lands. A special type of box trap has been devised for this purpose which permits other than wild cats to be released without injury. The wardens are also equipped with lethal boxes for disposing of wild cats and other predators by approved humane methods.

Our warden service, including our stream patrol, has been equipped with .410 gauge hand guns which have been very effective in predator control, particularly in the elimination of water snakes on trout streams.

Special trappers have been assigned to the control of predators on certain State-owned areas, under careful supervision by this Department through our warden service. Attention is being given also to the conservation of fur-bearing animals on State-owned lands by regulation and supervision of the special trappers.

The total number of predators taken during the biennium by our wardens and other appointed agents is as follows:

Bobcats .....	18	
Wild house cats.....	2,408	
Gray fox (sanctuaries only).....	50	
Red squirrels .....	681	
Weasels .....	114	
Skunks (sanctuaries only).....	76	
Woodchucks (cooperation with farmers)..	430	
Crows .....	3,491	
Crow nests .....	21	
Predatory hawks (cooper, sharpshin, goshawk) .....	631	
Great horned owls.....	116	
Water snakes (incomplete).....	2,309	
Snapping turtles .....	3,542	(51,028 lbs.)

#### 6. To Promote Winter Feeding by Farmers

The public response to the need for feeding birds during the severe winter of 1933-34 was a convincing demonstration of the spirit of cooperation which now prevails. Thousands of volunteers secured food, frequently at their own expense, and traveled long distances with great effort to make it available to wildlife. Their cooperation avoided the serious loss which was experienced in areas which could not be reached with food.

Many farmers, especially on our regulated shooting areas, have plowed and planted grain patches for game birds. They are cooperating also by avoiding the cutting of food-bearing shrubs along hedgerows and stone walls. Some have adopted the use of a flushing bar to avoid the destruction of nests in mowing.

#### 7. To Buy and Release More Birds (Pheasants and Quail)

A more careful distribution of pheasants in most suitable covers has been accomplished with good results. This has compensated in part for the fact that a larger liberation, in point of numbers, was made impossible by a reduction in revenue.

A quail restoration program was inaugurated in the fall of 1932. A strain of hardy, native, northern quail was secured and distributed at cost to Connecticut game breeders who agreed to certain requirements, including

supervision. Four hundred of these strictly northern quail were released in the northern counties of the state in the spring of 1934 in advance of the breeding season.

We hope to accomplish the restoration of this popular bird all over its former natural range in Connecticut by liberating more northern birds when a larger supply is available from the supervised quail breeders and by preventing any further liberation of southern quail which are not adapted to the climate or other conditions in Connecticut. To that end, the law which requires a permit from this Department for the importation or liberation of any live, wild bird will be strictly enforced.

#### 8. To Hasten Stream and Pond Pollution Control

The control of pollution has been greatly hastened by the fact that Federal funds for sewage disposal projects have been made available and the fact that plans for many of these projects had been prepared previously, due to the efforts of our State Water Commission. We acknowledge the co-operation of the Water Commission in promptly investigating all reports of pollution made by this Department and in correcting many abuses so far as existing laws would permit. Broader powers should be granted by law to insure better control of the pollution of our inland waters.

#### 9. To Employ Expert Game Bird Man

The Division of Game Restoration, established in the Department near the close of the previous biennium, has expanded rapidly. A conspicuous achievement in the waterfowl program under the direction of Mr. Philip C. Barney has been the establishment of thirty-nine waterfowl sanctuaries, mostly on private ponds, in addition to eight previously established, and the liberation of breeding stock thereon.

The inspection of game farms and of birds purchased for liberation has been carried on by County Warden Edward G. Wraight, in the capacity of Field Inspector in this Division.

Dr. Paul D. Dalke was employed in April, 1934, to take charge of game management projects in this Division. Dr. Dalke is a graduate of the University of Michigan, School of Forestry and Conservation. His graduate work was conducted on the Williamston (Michigan) Project under the direction of Professor H. M. Wight. This was the first general game management demonstration area to be established in this country. Certain features of our plan of regulated shooting are patterned after the Williamston Project which makes the employment of Dr. Dalke particularly appropriate. During his first year, the Department is sharing his services with the State College and the Extension Service at Storrs.

#### 10. To Broaden the Power of the Board to Regulate Seasons, Etc.

It is impossible to forecast seasonal conditions which may affect the status of fisheries or game twelve months in advance. With many facts available, it is impossible for this Department to predict what seasons or

other restrictions or privileges of hunting or fishing will accomplish the most intelligent conservation and use of wildlife resources even six months in advance. It is likewise impossible for the Legislature to make such predictions with accuracy. Thoughtful public opinion favors giving this Department the power to regulate hunting and fishing opportunities according to existing conditions based on facts. The interests of intelligent wildlife conservation and management demand it.

Such limited regulatory powers as have been granted to the Board in special cases have been used to excellent advantage in many instances during the past biennium.

#### 11. To Encourage Farmers to Provide Shooting

Many property owners have adopted the plan for regulated shooting mentioned above (1) which was inaugurated by this Department in the fall of 1932.

Under this plan approximately eighty thousand acres of shooting grounds, twelve miles of trout streams and several ponds have been opened to public shooting subject to regulations by the Board. In most cases, the areas had been previously posted against hunting because of abuses caused by unregulated public use.

#### 12. To Continue Leasing of Land and Water on a Larger Scale

The leasing of land and water for hunting and fishing has been necessarily restricted because of a sixty per cent. reduction in appropriations for this purpose.

Two shooting areas (approximately 11,500 acres) and several miles of leased streams have been discontinued. This loss has been compensated for, in part, by the plan of regulated shooting and fishing mentioned above. That plan, however, cannot be extended further without appropriations for posting and patrol.

The leased and regulated shooting and fishing plan inaugurated in Connecticut in 1925 is one of the most important contributions which this State has made to the perpetuation of the public interests in the sports of hunting and fishing. The plan has been copied with slight modifications in many other states.

It must be continued and extended in Connecticut if the sports of hunting and fishing are to be enjoyed by our citizens of average means both now and in the future.

#### 13. To Provide More Money by a Higher License Fee or a Shell Tax

A higher license fee or shell tax was suggested during the early part of the depression. It soon became apparent that an increase was inadvisable at that time. The suggestion has been temporarily abandoned.

It is clear, however, that improvement of conditions and opportunities for hunting and fishing in Connecticut can be secured only by the expenditure of more funds. It is proper to expect the sportsmen to pay for the cost of

producing and maintaining opportunities for hunting and fishing. They are quite willing to do that. It is improper to expect them to meet the expense of many activities required of this Department in the public interest, which are of no special benefit to sportsmen. The many activities and obligations of the Department which are of general public interest should be met by appropriations from general funds.

**14. To Provide and Carry on Extensive Publicity to Enlighten Citizens Concerning Conservation.**

Information regarding the activities of the Department has been widely disseminated by frequent news reports and by articles in many magazines. During the biennium, eight educational circulars and seventy-nine news releases have been issued.

The Press of the state has afforded us extraordinarily helpful cooperation and has done much to make the people of the state better informed and more conscious of the need for wildlife restoration.

The following circulars of information have been prepared and are available for distribution on request:

Construction of Box Traps for Cats and Other Ground Predators

Instructions for the Use of Pole Traps

Instructions for Raising Pheasants Under a Cooperative Plan

Feeding Birds in Winter

Fruit Bearing Shrubs Valuable as Food for Game, Song and Insectivorous Birds with Particular Reference to Winter Food

Game Bird Flushing Bar to Save Nests in Mowing

Plan of Cooperation with Property Owners to Regulate Hunting and Fishing

Suggestions for Stream Improvement

## REPORTS OF DIVISIONS OF THE STATE BOARD OF FISHERIES AND GAME

The organization of the Department is clearly shown by the diagram on the opposite page. The following changes in personnel have been made during the biennium:

Mr. Frank N. Banning was appointed Chief, Division of Wildlife Protection and Law Enforcement, on March 1st, 1934, to fill the vacancy created by the death of Mr. A. Joseph Williamson on February 4th, 1934, following an illness of several months.

Mr. Charles L. Rogers was promoted on March 1st, 1934, and placed in charge of the Marine Hatchery at Noank, to fill the position formerly occupied by Mr. Banning.

Mr. Kenneth Cobb was appointed on October 1st, 1933, to the position of Foreman, Windsor Locks Hatchery, to fill a vacancy created by the retirement of Mr. William D. Tripp after thirty years of faithful service in the Department.

Mr. Edward Reeve was appointed on October 1st, 1933, to the position of Foreman, Kensington Hatchery, which position was formerly held by Mr. Kenneth Cobb.

Dr. Paul D. Dalke was employed on March 15th, 1934, to take charge of game management programs in the Division of Game Restoration. During the first year of employment his services and salary are being shared with the State College and Extension Service.

Miss Mildred K. Bartle was appointed on June 15th, 1934, to the position of Assistant to the Superintendent in addition to her duties as Chief of the Division of Administration.

The following sportsmen, having volunteered their services, have been appointed to take charge of special programs in the Division of Game Restoration, for which they are particularly suited by technical training and practical experience. Their compensation has been at the rate of one dollar per year.

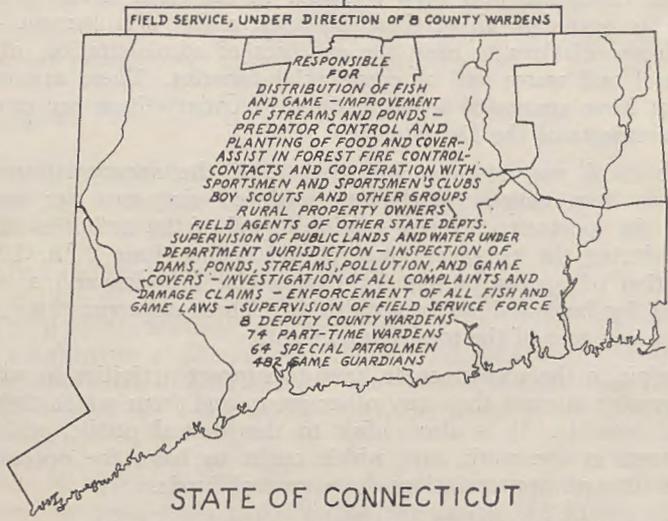
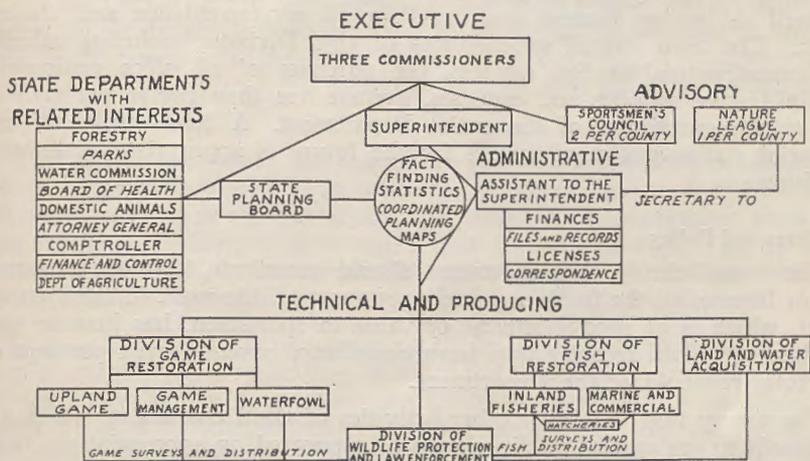
Mr. Philip C. Barney, in charge of Waterfowl Restoration Program since May 1st, 1932.

Mr. Leon P. Whitney, in charge of Raccoon Restoration Program since September 1st, 1933.

Mr. Robert G. Sternlof, in charge of Rabbit Restoration Program since May 1st, 1934.

# ORGANIZATION OF THE STATE BOARD OF FISHERIES AND GAME

JUNE 30, 1934  
AND  
RELATION TO OTHER STATE DEPARTMENTS



**STATE OF CONNECTICUT**

AREA 3,142,000 ACRES - POPULATION 1,634,000

1/6 ENTIRE POPULATION OF THE UNITED STATES LIVES WITHIN A RADIUS OF 200 MILES OF CITY OF MIDDLETOWN

## DIVISION OF ADMINISTRATION

MILDRED K. BARTLE, *Chief*

The Division of Administration is composed of seven clerks, whose combined duties include the keeping of all financial records of the Department as well as issuing licenses and handling all correspondence and clerical work. The total annual expenditures of this Division, including salaries for executive and clerical services, the purchase of all office equipment, administrative supplies and expenses, average less than twelve per cent of the total expenditures of the entire Department. A brief outline of our financial status and requirements for the future is appropriate under this Division.

### A Financial Policy

The sound theory that sportsmen should contribute, through a special tax or license, all the funds required to support all the work of the Department, which is of special interest or value to sportsmen, has become well established. Until recently they have contributed seventy-seven per cent of the total revenues of the Department.

The theory that the many other activities of the Department, which are of benefit to the general public, should be supported by appropriations from the general funds has also been accepted in the past. Since it has been impossible to segregate all of these expenses, a fair arrangement has been to grant appropriations to meet the expenses of administration, of acquisition of land and water and of commercial fisheries. These appropriations in the past have amounted to approximately twenty-three per cent of the total requirements of the Department.

For the fiscal year starting July 1st, 1933, the appropriations for the Department from general funds were reduced sixty-two per cent. Consequently, the sportsmen are now paying for all of the activities of the Department during the two-year fiscal period ending June 30th, 1935, with the exception of appropriations for commercial fisheries and a small appropriation for land and water acquisition. These appropriations represent only eleven per cent of the total requirements.

It is unfair to the sportsmen to have to support activities in which they have no greater interest than any other group and from which they receive no special benefits. It is also unfair to the general public, which has a great interest in the work, and which ought to have the opportunity to contribute through appropriations from general funds.

### Financial Requirements

It has been possible to maintain the essential activities of this Department during this biennium only by practicing strict economy in all directions, postponing certain work which will have to be done eventually and by a reduction of restocking programs. Such reductions in restocking, however, cannot be continued without serious loss in view of the increasing number of sportsmen.

In order to finance the essentials of our program during the second year of this fiscal period ending June 30th, 1935, it will be necessary to draw upon our reserve funds to the extent of \$43,730, leaving a balance at the end of the year 1935 of only \$47,220. Under previous fiscal policies this reserve has been held to meet current expenses during periods of low income.

We are requesting the next Legislature merely to restore former appropriations. If the request should not be granted it will be necessary to further reduce our yearly expenditures to fit our estimated receipts of \$182,000 per annum, plus one-half of the remaining reserve fund or a total of \$205,610 per annum.

This would necessitate an expenditure program of \$75,000 per year less than the average yearly expenditure for the four year period 1928-1932. It would leave us at the end of the year 1937 with no surplus on hand and the necessity of operating on revenues from license fees only. That revenue, estimated at \$182,000 per annum, is approximately \$100,000 less than the average yearly expenditure for the four year period 1928-1932.

During the next fiscal period starting July, 1935, if appropriations should not be restored, the reductions in our activities, which would have to be made, would seriously endanger the future of our wildlife resources and would cause a substantial loss of opportunities for hunting and fishing. At the end of the period, the further, more drastic reductions would so cripple the restoration program, in our opinion, that a recovery of the depleted wildlife resources and of lost opportunities could be accomplished, if at all, only at great expense over a long period of time.

#### The License Fee

The idea is frequently advanced that more funds would be made available by the sale of more licenses if the fees were reduced. The error of that reasoning is shown by the following data:

When license fees were increased from \$2.25 in 1929 to \$3.35 in 1930, the number of licenses issued dropped from 72,602 to 60,687, — a decrease of 16%. The revenue, however, increased from \$175,090 in 1929 to \$211,646 in 1930, a total gain of \$37,556, or 21%. It follows that if license fees were reduced, the revenues would be further decreased at a time when the demands for fish and game are being greatly increased even at the present cost of license fees.

The first obligation of the Department is to conserve our wildlife resources and to avoid their depletion by permitting the killing of no more than the annual surplus. The second obligation, to provide the maximum of opportunities for hunting and fishing to the largest possible number of people, is achieved in meeting the first objective. Both would be rendered impossible of accomplishment by a reduction in revenue from either appropriations or license fees. In such event, public opinion would demand and secure closed seasons to prevent the exhaustion of our wildlife resources and the sportsmen themselves would be the greatest losers.

### License Values

Every license holder with any experience or luck who goes hunting or fishing even a few times during the season takes a great deal more fish and game than could possibly be replaced by the funds which he contributes for that purpose through his license fee. Hence the greater the issuance of licenses, the greater the drain on these resources plus a proportionate reduction of funds for replacements. It is like burning the candle at both ends.

An analysis of the activities of holders of hunting licenses shows that 64% of all license holders shoot at least one pheasant per year. It costs two dollars to replace one pheasant or four dollars to purchase a pair of pheasants. The law permits the shooting of two cock pheasants per day and fifteen per season. In addition, the law permits the shooting of fifteen grouse, ten quail, thirty rabbits, thirty squirrels, not to mention migratory birds such as woodcock, ducks and geese. Even more liberal opportunities are permitted to the holders of fishing licenses.

It is apparent that for those who enjoy hunting or fishing there is nothing cheaper than a license.

Those who do not care enough about the continuance of their sport to contribute the relatively small amount of \$3.35 to the conservation of the species upon which their sport is dependent are most likely to be those who also disregard the reasonable rights of others. To make it easier and cheaper for such disinterested persons to enjoy the sports of hunting and fishing is to further increase the expense of law enforcement and other obligations of the Department.

It is sometimes argued that hunting or fishing is an expensive sport because of the cost of guns, ammunition, or rods, tackle and clothing, and that consequently the license fee should be reduced. It is probable that the cost of the license fee is not more than ten per cent of the average of all the annual costs of hunting and fishing, including equipment and transportation. This allotment for the protection and restoration of fish and game is a too small proportion of the total cost.

### License Fees Correspond to Club Dues

The license fee corresponds to the annual dues and greens fee of a golf club except in the amount. In fact, the Department considers its organization in the nature of a club sponsored by the State of Connecticut of which the directors, or Commissioners, are appointed by the Governor and given authority to appoint other executive officers and employees. The membership is open to all on the payment of nominal annual dues called license fees. The funds from "dues" are used to maintain fish hatcheries, to purchase game and carry on other activities to keep up a supply of fish and game. The privileges, determined by bag limits and open seasons, are extremely liberal.

The club grounds include 175,000 acres of land definitely open to the members for hunting and 200 miles of heavily stocked streams and many ponds. In addition, through the tolerance and courtesy of private property

owners, many more thousands of acres and miles of streams and ponds are open to hunting and fishing.

The funds derived from "dues" in this club are used also to employ men who correspond to umpires and ground keepers, whose duties are to see that members observe the rules of the game, called laws, and who also spend as much time as possible improving conditions for the sports.

Considering all the advantages, the present cost of the fees in this club is relatively small. In fact, there is no larger, more democratic or less expensive organization with greater potential influence than this association of sportsmen. If better hunting and fishing is desired, the club members will have to increase their dues.

In view of these considerations, the occasional suggestions which are heard, that license fees should be reduced, cannot be taken seriously. The Board, however, would favor a reduced license or a free license provided the Legislature would agree to meet the loss of essential revenue from licenses by appropriations at the rate of not less than three dollars per each free license issued. With the greatly increased membership which would result from this arrangement, it would become necessary at once to increase the appropriation to at least five dollars per license issued in order to avoid either a depletion of resources, which would end the sport for all time, or drastic restrictions of the sports which would also defeat the purpose.

## DIVISION OF LAND AND WATER ACQUISITION

HOMER H. JUDD, *Chief*

The Division of Land and Water Acquisition is responsible for that part of the work and obligations of this Department which has to do with providing opportunities for hunting and fishing. There is little objective in conserving fish and game unless an opportunity is also provided for its reasonable use. True conservation is not accomplished without such use.

In all thickly populated states the increase of posted land has become a serious problem. It has been particularly acute in the case of farm lands which offer the environmental requirements for pheasants.

Woodland areas have always furnished native game shooting, — grouse and rabbits, — particularly near the edge of open spaces. Shooting in such areas, away from open fields and farm houses, has never been conspicuous or troublesome.

The introduction of a foreign bird, the pheasant, by the game farm route at once attracted a large number of hunters who had no background of experience in the sport and little conception of the rights or interests of rural property owners. They were given to understand that pheasants were the property of the State and they assumed that they had a certain right to pass over privately owned land in search of State-owned pheasants which had been liberated for their special benefit.

The liberation of large numbers of trout also persuaded many people to take up the sport of fishing, which resulted in a concentration on the better streams, which in turn quickly depleted the supply and caused dissatisfaction among sportsmen and annoyance to the riparian property owners.

It is well-known that there is an element always among us who will disregard the reasonable rights of others if given the opportunity. If that were not so, we should have no need for laws. This thoughtless and sometimes lawless element among license holders has been responsible for many abuses of private property with the result that owners have been forced to post their lands against all public use, particularly against hunting and fishing.

### **The Connecticut Plan**

A practical solution of this situation was suggested by the late Mr. John Titcomb, former Superintendent, and adopted by the Legislature in 1925. It consisted of leasing hunting and fishing rights from property owners and establishing regulations for those areas, designed to avoid the damage and abuses which had become prevalent. The Legislature appropriated \$25,000 per year for this plan which has become known as The Connecticut Plan and adopted with modification in many other states.

Under this arrangement, since the State-owned Forests offered opportunities for hunting native, woodland game, the leasing of shooting rights was confined mostly to farm lands adapted to pheasants where difficulties from unregulated use had become prevalent.

By 1932 a leased shooting area of 54,000 acres had been secured at the rate of ten cents per acre per year making an annual rental cost of \$5,400. About 200 miles of trout streams had been leased and heavily stocked. Little attention had been given, however, to the fact that many ponds were being closed to public use by the organization of riparian owners for the purpose of posting their lands surrounding the ponds so that the public could not gain access to them.

### **The Public Interest in Water Resources**

There is an undeniable public interest in the water resources of the state. No private individual or group has an indisputable right to acquire sole possession and use of so important a natural resource. But until such time as the limits of private rights in respect to the public interest in our water resources has been determined, the only procedure which can be followed to protect such interests is to purchase public rights-of-way to such ponds which are in danger of being closed to reasonable public use.

Consequently, in 1932 a program to acquire rights-of-way to ponds was added to the purposes and duties of the Division of Land and Water Acquisition. Instead of increasing the appropriations for this Division to provide for the acquisition of rights-of-way to ponds, the Legislature, in 1933, reduced the amount of previous appropriations by sixty per cent for the two year period starting July 1st, 1933.

As a result of reduced appropriations, the leases of two shooting grounds, representing about 11,500 acres and several miles of streams have had to be abandoned. It has been possible to retain leases on most of the better streams and shooting grounds by a judicious expenditure of limited funds and because in many areas the leases did not expire during this biennium. It has been possible also to use some funds for a modest start on the program to purchase rights-of-way to ponds where such opportunities were offered.

The shooting grounds and fishing streams acquired under The Connecticut Plan have been intensively developed for a period of years. Failure to restore appropriations for their continuance would result not only in the loss of areas, which are so important in providing opportunities for hunting and fishing, but also in the loss of a substantial supply of fish and game which has become permanently established there. These well-stocked areas and streams, if abandoned by the State, would surely be acquired by private groups to the exclusion of the public.

#### **Revised Plan Based on Cooperation**

The most important development in this Division during the biennium has been the inauguration in 1932 of a plan of cooperation with property owners which provides for reasonable public use of private lands for hunting and fishing in consideration of certain valuable protective services rendered by this Department. This is merely an extension of the purpose and principle of The Connecticut Plan of leased fishing and shooting areas with the addition of the permit system and some other features of The Williamston Plan which was devised as a self-protective measure by the rural property owners of Williamston Township, Michigan.

Under the revised plan the Department offers to establish regulations governing hunting or fishing so as to avoid the damage and abuse which results from unregulated public use of private lands. It also agrees to patrol areas where this cooperative arrangement has been made to make sure that the regulations are being observed and to place posters on these areas stating that hunting is permitted under certain regulations.

The regulations for these areas are the same as those which have proven successful on leased areas with the additional requirement that written permission must be secured from the property owner and that a report shall be made of all game, fish or predators taken under the permit. The property owners, in turn, agree to issue permits to all licensed sportsmen unless they have cause to refuse.

This arrangement is possible only when all property owners on an area of at least three thousand acres join together in making such a cooperative agreement with the Department. In most cases a permit issued by one property owner is honored by other property owners on the area.

#### **Advantages to Rural Property Owners**

A concentration of gunners is avoided on the best managed areas by an agreement where the property owners agree to limit the number of permits



Regulated Shooting Replaces  
"No Trespassing."

Shooting Permitted Subject to Regulations  
of the State Board of Fisheries  
and Game.



Shooting privileges on 80,000  
acres have been secured under the  
Plan of Cooperation with Prop-  
erty Owners.

to be issued by any member of the group at any one time. Thus, when the agreed number of two or three permits has been issued, the property owner has "cause to refuse" to issue any more at that time. In that event the applicant must go to another part of the area to secure a permit from some landowner who has not issued his quota for the day.

A sanctuary is created around each homestead by the regulation which forbids shooting within five hundred feet of a building or toward buildings or livestock. An important regulation for fishing streams or ponds requires sportsmen to keep within ten feet of the bank. Other regulations prohibit leaving cars in barways or blocking roads; leaving gates open, bars down, breaking down fences or causing damage to other property; crossing land under cultivation, leaving rubbish or building fires.

The regulations are easily enforceable. Should damage to property be caused it could be traced easily. The property owners cooperate with their patrolmen in such cases. As a matter of fact, the plan is almost automatic in its enforcement because when each one on the area has furnished identification by giving his name, address, license number and auto registration he is sure to be extremely careful in observing all the regulations under which the permit is issued. It has been observed also that the troublesome element carefully avoids such regulated supervised shooting grounds or fishing waters.

A violation of any regulation is subject to the immediate suspension of the license. This may be followed by a revocation of the license for varying periods of time depending on the seriousness of the offense. In any case the action is immediate and the penalty is a most effective deterrent.

Thus, under certain reasonable conditions, the Department is actively cooperating with rural property owners in the protection of their lands and the plan is proving entirely satisfactory to the property owners. It is also satisfactory to the sportsmen since the regulations merely require the behavior and courtesy to property owners which gentlemen naturally observe.

#### **Advantages to Sportsmen**

Under this plan hunting and fishing rights have been secured on a total area of more than eighty thousand acres of shooting grounds, twelve miles of streams and several great ponds. These privileges have been secured without payment for a lease. The Department, however, assumes a definite obligation to provide posting and patrol of the area. Consequently, although a large additional area for hunting and fishing has been secured during the biennium, the financial obligations of the Department to patrol and protect these areas have not been decreased.

The plan has proven so popular with property owners that it could easily be extended to provide practically all of the rural property owners with the protection from damage and abuse which they desire and need. The restoration of the former appropriation of \$25,000 per year for the Division of Land and Water Acquisition would go far toward giving this service to all the rural areas in Connecticut where it is needed and desired. The benefits

to the property owners as well as to the sportsmen would more than justify this modest cost.

The total area definitely open to shooting under regulation by this Department includes: State Forests—58,000 acres; Leased Areas—37,000 acres; Regulated Areas—80,000 acres; Total—approximately 175,000 acres,—an average of 5.8 acres per licensed hunter. These figures do not include the sanctuaries which constitute about 10% of the total area. No other state offers so large an area per licensed gunner which is definitely open to regulated public shooting.

#### **Appropriations Needed to Continue Plan**

No service which this Department renders to the sportsmen or to the general public is of greater importance than the acquisition and maintenance of hunting, fishing and other recreational opportunities on lands and waters. The Department, therefore, is requesting an appropriation of \$25,000 per year for the Division of Land and Water Acquisition, of which \$15,000 will be used for the acquisition and maintenance of hunting and fishing opportunities by lease or agreement and \$10,000 for the purchase of public rights-of-way to great ponds.

The appropriations needed by this Department for Land and Water Acquisition would in no sense duplicate or take the place of appropriations needed by the Commission on Forests and Wildlife for adding to the present State Forests or for acquiring land in a new purchase area which has been established on the Salmon River. The Commission on Forests and Wildlife was created for the sole purpose of purchasing land which would serve a combined coordinated use for forestry and for wildlife restoration.

The Land and Water Acquisition program of the State Board of Fisheries and Game on the other hand is mostly concerned with the lease of hunting or fishing rights and with the actual purchase of only small "key" pieces within important leased areas, rights-of-way to great ponds or the purchase of lands or waters which are adapted to management exclusively for special fish or game purposes.

### **DIVISION OF WILDLIFE PROTECTION**

FRANK N. BANNING, *Chief*

This Division includes the warden service which, in its actual work, makes effective the planning and production efforts of all other divisions.

The duties of the warden service are outlined in the diagram of the Department opposite page 12. They may be summarized also as follows:

*Protection* of all fish and game in open and closed seasons.

*Salvage* of fishes stranded by drought conditions and by the drainage of ponds.

*Replacement* by the distribution and liberation of all fish and game raised or purchased by the Department.

*Restoration* by natural methods, — gathering and planting winter food bearing shrubs, the control of predators and other improvements of natural conditions.

*Cooperation* with sportsmen and property owners.

The status of the game warden in Connecticut has undergone a radical change, due to the cooperative and constructive policies under which they are operating. Sportsmen have come to recognize and to appreciate the fact that the warden's purpose in checking catches and licenses is to secure information which will be helpful to the Department in making better hunting and fishing the following season.

The Connecticut wardens and the sportsmen have a mutual interest in better hunting and fishing conditions. The opinion and advice of the warden on many subjects is sought and respected, particularly regarding fish and game conditions within his district and regarding the activities and policies of the Department.

#### **Wardens Reflect Department Policies**

Property owners on leased and regulated hunting or fishing areas are protected by the wardens from the damage to property and the abuse of privileges which often occurs on lands over which this Department has been given no special jurisdiction. On such areas, shooting within five hundred feet of a building or toward buildings or livestock is an important regulation which the warden will strictly enforce. Crossing cultivated fields, leaving bars down or gates open, parking cars in barways or blocking wood roads is no longer tolerated on regulated areas in Connecticut.

The wardens are prepared also to cooperate with rural property owners and sportsmen in giving information about simple, practical methods of increasing the supply of fish and game, such as the improvement of streams or ponds, the construction of fishways, the use of the flushing bar which saves nests in mowing, leaving hedgerows of shrubs which furnish food for birds in winter and controlling predators. In some cases the warden will even assist in placing pole traps to catch the hawk which is stealing the chickens as well as feeding on wild game. In short, the game warden, like the Farm Bureau Agent, is a helpful asset to any community.

In addition to his other duties the game warden in Connecticut is a law enforcement officer. He is not trying to make a record of arrests since the policy of the Department does not lie in that direction. He is authorized and prepared to issue official warnings in first offenses or for minor infractions of the laws where deliberate intent is not clearly established, and when in his judgment more good will be accomplished by such warning than by arrest. At the same time he is expected, if not required, to bring to justice promptly those deliberate, consistent violators of our conservation laws who are well-known in the community where they live. In such cases, the policy of the Department calls for 100% convictions.

### Volunteer Service

Sportsmen generally have responded to this program by reporting locations where frequent violations occur. This cooperation is helpful in directing the attention of the warden service to troublesome areas or individuals. This also gives the wardens more time for other activities which make for better hunting or fishing conditions.

The regular warden service is supplemented by a volunteer organization of about five hundred game guardians. This organization was started in the fall of 1932 during a serious outbreak of violations in advance of the shooting season, which included attacks on two of our wardens. The plan has been successful and helpful in many instances. Several of the volunteers have been appointed to the regular service because of outstanding interest and ability which they demonstrated as game guardians.

Although the game guardian service was inaugurated primarily for assistance in the enforcement of laws, it has since been extended to include constructive work such as stream improvement, feeding birds in winter and predator control.

Our records of the activities of our full-time wardens for a period of twelve months, from May 1st, 1933, to April 30th, 1934, show an average of 9.9 hours per man per day for 365 days at an average compensation of forty-seven cents per hour per man. The part-time wardens also give a great deal of time for which they receive no compensation. The long hours given by the wardens at a low wage rate proclaim their genuine interest in the work and their loyalty to the Department and to the sportsmen whom they serve.

## DIVISION OF FISH RESTORATION

EBEN W. COBB, *Chief*

The work of the Division of Fish Restoration falls naturally into two subdivisions: the Inland Fresh Water Fisheries and the Commercial and Marine Fisheries.

The Inland Fisheries, in turn, embrace the two distinct interests of trout fishing and pond fishing. These must be considered separately because the problems are distinctly different in each case as are the methods of restoration which must be employed.

The natural supply of pond fishes has permitted a long open season and liberal catch limits in spite of the fact that little attention has been paid in the past to their propagation and restoration in comparison to that which has been given to trout.

The principal reason for this is that pond fishes are more hardy than trout and less exacting in their requirements. Consequently, in most ponds, suitable conditions for some natural propagation and increase of pond fishes are still to be found.

Trout, on the other hand, require cool, pure water for their survival and access to small, spring fed tributaries for spawning. Owing to excessive pollution and high temperatures caused by dams and denuded watersheds, there are few streams in this state which offer ideal year around conditions for the survival of trout and practically none which offer opportunities for natural reproduction and increase.

The trout restoration program, therefore, must depend first of all on artificial propagation and the liberation of trout intended only to be caught.

Since natural propagation has been so important a factor in maintaining pond fishing, better results in increasing the supply will be obtained by giving attention to the improvement of natural conditions than by depending on the highly artificial methods which are essential in the case of trout.

### THE POND FISH RESTORATION PROGRAM

KENNETH COBB, *In Charge*

#### Natural Propagation

The most effective and economical methods of pond fish restoration consist of protecting the spawning areas, increasing the natural food supply and in some cases encouraging the growth of certain aquatic plants which furnish shelter or which harbor insects on which fishes feed. An increase of vegetation in certain areas is also useful in providing young fishes with shelter and protection from natural enemies.

#### Protected Spawning Areas

The situation at Candlewood Lake serves as an excellent example of the rapid increase in the supply of fishes by natural propagation when a suitable environment with an increased food supply is provided.

The valley, which is now covered by this large artificial body of water, formerly contained three small ponds. As the area became flooded the insects and other food supply as well as the fishes in these ponds spread out over a wide area. With so much water there was no competition between them and scarcely any loss of adults or young. Although some stocking of the lake has been done, particularly with pike perch, the most important step taken by this Department was the early establishment of protected spawning areas where no fishing is permitted.

Now that fishes have become abundant over an area which formerly, as farm land, offered little recreational opportunity, this Department is frequently besieged by groups which persistently demand that the spawning areas be abandoned and fishing permitted in areas where they have chosen to build cottages or where they wish to start a new real estate development.

The Department has recently surveyed the spawning grounds, which were established originally at Candlewood Lake, and believes that they are fairly distributed and essential to the maintenance of good fishing in the Lake. In fact, we believe that the good fishing which now obtains will not continue unless additional spawning areas are established! Consequently, we have held out against local demands and only regret that in some cases the petitioners have taken an attitude of destructive opposition to this Department as a whole and to all of its activities.

The conditions at Lake Zoar are similar to those at Candlewood Lake except that no spawning grounds were established when this area was flooded and that carp are present. Although Lake Zoar has been stocked in about the same proportion, with the exception of pike perch, and efforts have been made to control carp, neither the supply of game fishes nor the fishing is comparable to that in Candlewood Lake.

#### **Pond Improvement**

The shores of many ponds have been completely cleared of fallen trees and snags which formerly furnished hiding places for young fishes or ideal locations for adult fishes. In such cases the conditions required by fishes may be improved by sinking bundles of brush to create more hiding places. This can be accomplished without interfering with boating or affecting the beauty of the shore line. The trapping of turtles which feed on pond fishes is also an important part of the pond fish restoration program undertaken by this Department.

#### **Weed Control**

The intensive development of many ponds for summer camps with boating and bathing as important considerations has led to an increasing demand for the elimination of weeds.

The presence or absence of weeds is determined by the character of the pond bottom and by the physical and chemical condition of the water. Those who build cottages on warm water ponds with muddy bottoms will always be troubled with weeds and should not expect to have those ponds transformed into sandy bottomed cold water ponds without weeds.

As a rule an overabundance of weeds is found only in artificial ponds or in natural ponds where the water level has been raised by some unnatural means. Having thus unwisely upset the conditions established by nature, man must suffer the inevitable consequences of the new conditions which have been established as a result of his fumbling methods.

Certain chemicals will kill weeds but only if used in sufficient strength to destroy practically every other living thing. When natural conditions are destroyed by such drastic measures, the result is often much more objectionable than the condition which was to be corrected.

Algae may be destroyed by weak solutions of copper sulphate without killing fishes but not without killing other delicate forms of small animal life on which the fishes depend for food during at least a part of their existence. A continued use of a weak solution over a long period is quite as destructive as a single use of a strong solution.

An important law makes it illegal to introduce any poison (which includes copper sulphate) into the water of any stream, pond or lake. This law is being strictly enforced although experiments are being carried on by the State Water Commission in cooperation with this Department in the control of algae and other weeds in certain carefully selected ponds.

The importance of having water reasonably free from weeds in the vicinity of docks and floats is recognized. Excessive weeds can be controlled in such limited areas only by keeping them mowed with a hand-scythe.

#### Private Waters

Many people assume that because they own the land around a pond it is legally "private" and may be fished at any time by the owner or his friends without a license or may be treated at will with copper sulphate or other chemicals to destroy weeds.

That conception is entirely erroneous. The law distinctly defines "private waters" as a natural or artificial body of water entirely surrounded by land owned by a single individual, not a partnership, corporation or voluntary association, of which water supply all sources are located substantially within the property of the owner, to which fish do not have access from waters not under the control of such owner or from waters stocked at the expense of the State.

The law also defines the rights of the owner of such "private waters" as well as his obligations, which include the registration of his pond with the State Board of Fisheries and Game, before any special privileges are accorded.

Thus, by defining "private waters," all others are classified as public waters and although the property owners around such public waters may exclude the public from access to them by invoking the trespass laws, which are not a part of the fish and game laws, the property owners have no special rights or privileges in connection with such waters and must conform to all the laws governing fishing and other uses of public waters. The only

exception recognized by the law is in the case of water supply reservoirs where fishing is prohibited by Section 3167 of the fish and game laws which is enforced by this Department.

### Reservoir Seining

The seining of water supply reservoirs to secure fishes for stocking other ponds, which are open to fishing, was undertaken on an extensive scale some years ago and proved very successful.

The expense of the method was justified by the fact that many large adult fishes were secured which were valuable as breeding stock and which could not be secured as a rule in any other way. Experience has shown, however, that since copper sulphate and other chemicals have been used with increasing frequency for treating water supply reservoirs, the quality as well as the quantity of fishes in such treated reservoirs has been greatly reduced.

At present, out of sixty reservoirs which formerly produced a good supply of fishes, only four are sufficiently productive to justify the cost of seining and then only for the purpose of securing breeding stock.

The reservoir work is being abandoned in favor of more productive, less expensive methods. Fingerlings can be produced in rearing ponds at less cost. Brood fishes can be secured from commercial fishermen operating in the Connecticut River and from the salvaging of fishes in ponds which are drained for one reason or another.

In view of the cost of securing adult pond fishes by any method, there is no economic justification for planting them, as trout have to be planted, with the expectation that they will be caught before they have had an opportunity to spawn. Consequently, the distribution of adult pond fishes is being confined largely to those ponds where conditions offer natural protection to spawning areas or where the local sportsmen and property owners have cooperated with this Department in establishing and protecting suitable spawning areas.

### The Drainage of Ponds

It is important to call attention to the law which prohibits the drainage of water from *any* stream, lake or pond *for any purpose* without notifying the State Board of Fisheries and Game of such intention (Section 3232).

The purpose of this law is to give this Department reasonable opportunity to salvage all of the fishes which may come from such drained ponds. Such drainage is often helpful to the fishing if the pond is closed for one year and a liberal brood stock is always returned to the pond.

The law is an important one not only in supplying fishes for planting in other ponds but in preventing the introduction of harmful fishes in the waters below. Many trout streams have been damaged in the past by the introduction of pickerel and other pond fishes caused by the improper drainage of a pond without notification to this Department or without making any effort to prevent the escape of pickerel and other pond fishes

which should not be permitted in a trout stream. Consequently, the law mentioned above is now being strictly enforced.

### **Planned Distribution**

It is probable that more damage has been caused to pond fishing by the unwise distribution of fishes in waters to which they were not adapted than by any other single factor. The unwise introduction of carp from Europe is an outstanding example. This fish greatly disturbs natural conditions by destroying vegetation and roiling the water. It is partly responsible for the extermination of wild rice in many of the coves along the Connecticut River. Also, the introduction of white perch in many of our inland ponds has had a disastrous effect on other fishes native to those waters.

A most important law passed at the last session of the Legislature now makes it illegal for any person to introduce into this State or to liberate therein any live fish, wild bird or quadruped unless he shall have obtained a permit therefor from the State Board of Fisheries and Game. This restrictive law has a constructive, helpful purpose and should be carefully observed by sportsmen.

### **Hatchery Propagation**

The efforts of this Department in propagating pond fishes have been confined mostly to those species which serve in part as food for larger game fishes. Such forage fishes include yellow perch, calico bass and sunfish. These fishes also furnish excellent sport when taken on light tackle and are favorites with boys. A large number of bullheads are propagated and liberated since, in point of numbers caught, these may be considered the most popular fish. All of these fishes can be propagated easily at small cost.

During this biennium, facilities for the propagation of pond fishes have been greatly increased by the construction of rearing ponds with CWA and FERA funds. Six ponds were constructed at our Kensington Hatchery and two at our Burlington Hatchery. These ponds have a combined capacity for rearing 180,000 calico bass and 220,000 bullheads per year. In addition to the above, the CCC has also constructed two rearing ponds on state forests which will greatly increase the production of pond fishes.

### **Yellow Perch**

The yellow perch is one of our most important fishes because it is prolific, hardy and therefore abundant. It is a good pan fish, easy to catch, popular with children and also serves as a food supply for other larger game fishes.

We are fortunate in being able to secure an almost unlimited supply of yellow perch eggs from the coves of the Connecticut and Thames Rivers.

In 1933 the entire lot of eggs taken in Keeney Cove was brought successfully to the eyed stage and then destroyed by pollution caused by a leaky oil barge which was being towed up the river to Hartford. All attempts to collect or compel payment for this destruction of State property



State Hatchery at Burlington on the Nepaug State Forest.



Rearing Ponds Built by C.W.A. and F.E.R.A. at State Hatchery, Kensington, 1933-34.  
Capacity for Rearing 300,000 Pond Fishes.

— Photos by Photo Section A. C., C. N. G.

were unavailing owing to inadequate laws. The distribution of yellow perch fry for that season was therefore reduced to only 53,900,000 taken from a cove of the Thames River.

All ponds in the state which are open for fishing have been so heavily stocked with yellow perch during the past few years that further distribution of perch fry has been practically discontinued for fear of creating an over-balance of perch in those ponds.

Our laws do not prevent the commercialization and sale of yellow perch during the open season. In spite of the abundance of this species the time has long since passed when we should permit the commercialization and sale of any game fishes at any season.

### White Perch

The natural habitat of white perch is in salt and brackish coastal waters. During the spawning season in the spring it runs into fresh water streams and frequently becomes landlocked in coastal ponds. In such ponds it is a valuable fish. It is hardy and prolific, of good flesh, edible and provides excellent sport.

When white perch are introduced into strictly fresh water inland ponds, as a rule they are extremely destructive to other fishes, particularly black bass. In most cases they increase rapidly and quickly upset the balance between species in any pond, causing a great deal of harm. Under these conditions they do not grow large enough to furnish as satisfactory sport as the fishes which they replace.

The further introduction of white perch in any pond should be discouraged by sportsmen since it is harmful as well as illegal without a permit from this Department, which probably will not be granted except for certain ponds near the coast.

### Calico Bass or "Crappie"

The calico bass or "crappie" is a member of the sunfish family which has come to us from the middle west. It is particularly valuable as a forage fish since its feeding and other habits do not compete with any of our native game fishes. It is also a good pan fish and provides excellent sport with light tackle and flies. During the biennium, 157,003 calico bass have been propagated or netted and distributed.

### Bullheads

The bullhead is the most prolific and most abundant of all indigenous fresh water fishes. Based on the number caught in relation to the other fishes the bullhead is the most popular although the taking does not have the same appeal as does the taking of trout.

During the biennium 104,520 bullheads have been purchased and 168,894 were propagated or netted, making a total of 273,414 distributed.

### Black Bass

The large-mouthed and small-mouthed black bass are in the same family as the sunfish. The former prefer clear water ponds with gravel or rocky bottoms. The large-mouthed bass prefer warmer water and muddy bottomed ponds. When found together, under similar conditions of water temperature and flow, there is little to choose between the fighting qualities of a large-mouthed or a small-mouthed bass of equal size.

The propagation of black bass beyond the fry stage has not been attempted in Connecticut because of the known difficulty and expense of rearing them. An experiment in their propagation, using circular ponds and artificial feeding methods, which have been developed recently, will be undertaken in the near future.

The best results at the smallest cost have been secured by the planting of the fry. This method is highly developed in Connecticut. A large supply of bass fry has been secured each year from Wangum Reservoir through the cooperation of the Town of Norfolk.

The procedure is to locate the nests and when the young bass are hatched to remove them from the nest and hold them in a container until they are ready to feed, at which time they naturally scatter and seek shelter in shallow water under stones or vegetation. At this stage of their development the bass fry are transferred to other ponds and liberated in carefully selected areas. The work of securing bass fry from Wangum Reservoir is carried on in cooperation with the U. S. Bureau of Fisheries.

The success of this method depends on the careful planting and distribution of fry in suitable areas which have been carefully selected. The best results have been secured by making large plantings every few years in selected ponds rather than a small scattering of fry each year. This method also reduces the cost of distribution and has become the established policy of this Department.

Neither the distribution of bass fry nor the propagation of bass fingerlings can be depended upon entirely to maintain satisfactory bass fishing. Natural propagation has been so successful in maintaining a supply of bass with comparatively little assistance from restocking that the improvement of conditions for natural increase must be accepted as the most important factor in this program.

The law protects bass during the spawning season but that comes at a time when there is an open season for other pond fishes. Consequently, there is nothing in the law to prevent a person from fishing for perch or pickerel on the bass spawning grounds.

At that season the male bass are protecting their nests and will strike viciously at anything which comes near. It requires no skill to take bass under those conditions. The practice is most destructive and unsportsmanlike. It is well-known that many bass are illegally taken, both day and night, during their spawning period in spite of the efforts of our wardens to cover all of the ponds at that season.

Although black bass taken "for the sport of it" during the spawning season may not be killed, the destruction of nests caused by the disturbance of bass during that season is nearly as complete. Also while the male bass is away from the nest, being caught, even though released unharmed, other fishes may eat the eggs.

The solution of this is to set aside bass spawning areas which are closed to all fishing until July 1st or July 15th if the season is late. That date should be regulated by the Board according to seasonal conditions.

To encourage the establishment of such spawning areas, it is the policy of this Department to plant bass fry only in ponds where spawning areas have been established by the Department in response to a petition from the riparian owners. During the biennium, 562,000 bass fry have been distributed in the ponds where spawning areas have been established.

### Pickerel

The pickerel is a voracious fish which makes a rapid growth. It is therefore destructive of other fishes and is unpopular in many quarters, particularly among bass fishermen. The environmental conditions required by pickerel, however, are quite different from those required by bass. There may be an overlapping of areas, particularly between large-mouthed bass and pickerel, but as a rule each has an area which is distinctly suitable either for one or the other.

The principal food of both fishes is minnows, yellow perch, young sunfish and crappies. Although pickerel and bass are both voracious feeders, they are extremely quick and able to escape danger. Consequently, the conflict or competition between the two is not serious, as a rule, if their normal food is available. The relative abundance of the two species in any pond depends more on natural conditions and the food supply than on competition between them.

The pickerel is a popular game fish with many sportsmen and should be increased in suitable waters. There is an increasing interest in fly fishing for pickerel and they put up a game fight when taken on light tackle. The most practical method of improving pickerel fishing is to increase the supply of forage fishes, such as yellow perch, crappies and pond minnows.

The propagation of pickerel in hatchery ponds is difficult because of their feeding habits and has not been undertaken although experiments are planned for the immediate future. There are many small abandoned ice ponds which could be used to advantage in raising pickerel. The first step is to drain the pond and clear it of destructive species, including snapping turtles. The next step is to establish a stock of forage fishes. This is followed by placing a limited number of adult pickerel in the pond just in advance of their spawning season. The only remaining difficulty comes in removing the adult fishes after spawning. As a rule this can be accomplished in small ponds with hook and line.

The use of abandoned ice ponds offers opportunities for interesting experiments by sportsmen's clubs in the propagation of pickerel. This Division

plans to conduct an experiment along this line in one of the ponds built by the CCC on the Tunxis State Forest.

### **Pike Perch**

The pike perch has been established in this state from eggs taken in Lake Champlain. The large catches which have been reported lately from Candlewood Lake, where the introduction of these fishes have been very successful, are the result of plantings of fry which were first made there in 1928. The planting of pike perch fry, however, was preceded by the planting of smelt, which constitute the principal food supply of pike perch.

These fishes are only adapted to large ponds having natural conditions similar to those which obtain in Candlewood Lake. The distribution of pike perch in other ponds which are not suitable for them or which have not been stocked with smelt should be discouraged and is illegal without a permit from this Department.

The U. S. Bureau of Fisheries' hatchery on Lake Champlain has not been operated since 1932. Consequently, pike perch were not available in 1933. In 1934, however, a cooperative arrangement was made with the State of Vermont for the taking of pike perch eggs at the hatchery formerly operated by the U. S. Bureau of Fisheries. Under this arrangement, we received twelve million eggs in the spring of 1934. These were placed in our temporary hatchery at Candlewood Lake and were successfully hatched.

### **Lake Trout and Salmon**

Between the years 1893 and 1929, a total of 1,078,754 lake trout were planted in forty-six ponds, including some ponds in each of the eight counties in the State. These trout were mostly in the fry stage but the plantings also included some fingerlings.

Lake trout require deep, cold, clear water. Most of the ponds where these fishes were planted were no more suitable for them than the land and the climate in Connecticut are suitable for growing oranges or polar bears.

The only pond where lake trout have become established as a result of these widely scattered plantings is a deep, cold water pond near Lakeville in Litchfield County where they have persisted to this day although no plantings have been made in the state since 1929.

Although lake trout fishing in this relatively small pond can never be expected to compare with lake trout fishing in the many big lakes in the north where these fishes thrive and although the number of sportsmen who enjoy lake trout fishing enough to travel to this pond is not large, it seems worth while to continue this species in the pond which has proven to be adapted to them. Consequently, an application has been made to the U. S. Bureau of Fisheries to supply twenty-five thousand lake trout fry per year for stocking this lake, starting in the spring of 1935.

As a matter of record at this time, we note the fact that between the years 1870 and 1921 a total of 5,396,688 salmon were planted in forty-seven streams and ninety-eight ponds and lakes including some in each of

the eight counties in the state. None of these plants were successful in establishing this cold, pure water species in any stream or pond in this state.

### THE TROUT RESTORATION PROGRAM

The problem of maintaining trout fishing in Connecticut is practically confined to the propagation of trout at hatcheries and planting them in streams for the sole purpose of having them caught before they are lost by other causes.

The construction of numerous dams on many of our streams prevents the passage of trout to their spawning ground. In many cases, the dams impound water over shallow areas exposed to the sun, which increases the water temperature so that the stream below becomes unsuitable for trout in summer. This also chills the water in winter, resulting in the formation of anchor ice in flowing streams, which further destroys many of the trout which may have survived the summer drought.

The freedom with which our streams are used as sewers by individuals, communities and industries destroys their ability to support many trout, particularly during periods of low water. This situation also offends the aesthetic value of our streams and injures other recreational interests.

The drought period is the result of deforested watersheds which permit a quick run-off of melted snow in spring and of rainfall at all seasons. The flood waters are often so strong that they move great quantities of gravel, stone and even boulders loosened by anchor ice, which literally scour the stream bed, destroying the food supply as well as the trout themselves. Only those trout which can find shelter in deep holes or in pockets under immovable boulders can survive such flood periods.

It is only during about two months in the spring that the natural conditions of water temperature and stream flow are suitable for supporting many trout in most of our streams. To meet the requirements of thirty thousand licensed fishermen, most of whom enjoy some trout fishing, the best that can be hoped for until the destructive influences have been removed by reforestation, pollution control and better regulation of dam construction is to simulate as closely as possible the conditions in natural trout streams in wilderness areas.

#### General Policies

To that end, the feeding of trout at our hatcheries has been improved to such an extent that many freshly planted trout have been mistaken for "natives" because of their high coloration. The use of liver has been greatly reduced in favor of fish products such as shrimp meal, salmon eggs, etc.

The size and weight of trout planted has been increased. This necessarily means some reduction in the number of trout which can be reared in the space or with the funds available.

The distribution and actual planting of trout is now carried on by our warden service working with the hatchery crews. The men from the hatcheries are responsible for the delivery of trout to the streams or ponds in

first class condition. The wardens are responsible for the widest possible distribution of the trout in the streams to which they are assigned.

Planting trout under bridges or even near bridges is definitely "out," except in case of emergency or when flood waters make it impossible to reach the stream at any other point. The use of floating boats for planting trout has been tried, proven successful under certain conditions and adopted in streams which are adapted to the method.

As the trout in our hatcheries increase in size they have to be sorted and thinned out to provide for their further growth. The larger, finer fish are always retained at the hatcheries to be planted as adults or two-year-olds previous to and during the fishing season. The slower growing trout selected from these sortings are liberated in carefully selected, small streams tributary to the larger streams which are open to fishing.

The distribution of all fingerlings as well as of all adult trout is based on the detailed information regarding each stream included in the state-wide stream survey which was started in 1925 and finally completed in 1931. The data, however, were not available in usable form until the year 1933.

#### Results of Trout Tagging

The marking of sixteen thousand trout with internal numbered tags was undertaken in 1933, partly for the purpose of checking the information of the stream survey with actual results on the thirty-five major streams which were selected for this experiment. The cooperation of sportsmen in returning more than five thousand tags with requested data in each case has furnished information which has been of great practical value in planning further improvements in the natural conditions of the streams and in the distribution of trout.

These records are now being studied in more detail by Mr. W. A. Elkins of the U. S. Bureau of Fisheries and doubtless will be made available later in printed form. The cooperation of sportsmen in giving further information regarding trout tags to our wardens and stream patrolmen in the year 1934 is also gratefully acknowledged.

Briefly and in general the data secured from this trout tagging experiment indicate the following pertinent facts:

1. The total number of trout caught in an average year is probably not more than 50% of the number actually planted during that year.
2. The catch of trout from a single planting is not immediate but is well distributed over the entire season.
3. Most of the trout are caught very close to the place where they are planted.

The loss of trout indicated above (1) is probably due primarily to predators and unsuitable stream conditions. The wardens and stream patrolmen have been provided with .410 gauge hand guns which have been very effective in killing large numbers of water snakes and in reducing the loss of trout from that cause.



All Trout Are Carefully Planted and Widely Distributed.  
Salmon River, 1933.



A Trout or Two in Each Good Hole Is Possible Only When  
the Floating Boat Is Used. Blackledge River, Tributary  
to the Salmon River, 1934.



The Civilian Conservation Corps Demonstrates Stream Improvement on the  
Farmington River, West Branch, 1933-1934.

— Photos by A. E. Moss.

### Stream Improvement

The improvement of stream conditions has been accomplished in the State-owned portions of a number of streams. This work has been done mostly by the Civilian Conservation Corps as reported on page 87. Improvements have been made in the Fenton River by students at the State College under Professor A. E. Moss and by the warden service on certain streams in Tolland and Middlesex Counties. It is hoped that the stream improvements which have been completed will serve as demonstrations of proper methods and will encourage local groups of sportsmen and sportsmen's clubs to undertake similar improvement programs for the streams in their respective localities.

### Brook Trout

Most of the brook trout raised are distributed as yearlings for the reason that our hatchery methods make it possible to grow yearling brook trout to an average length of seven to eight inches by the opening of the season on April 15th.

On the theory that the greatest sport in trout fishing is found in streams which offer a variety in the size of trout, a number of yearling brook trout were held over in 1933 and liberated as two-year-old native brook trout during the season of 1934. The catching of an occasional large brook trout, some weighing two pounds, contributed much to the success of the fishing season in 1934. The plan is being continued since it met with favor among the anglers.

A total of 240,251 adult brook trout has been reared and liberated in streams open to fishing during the biennium. A total of 618,644 fingerling brook trout has been liberated in suitable tributary streams during this period.

### Brown Trout

Brown trout grow more slowly than brook trout during their first year. Their average size as yearlings is not sufficient to warrant their liberation. During their second year, however, they grow more rapidly than brook trout and reach an average length of nine to twelve inches by the opening of the fishing season. All brown trout, therefore, are planted as two-year-olds.

Brown trout are more hardy and will stand warmer waters than brook trout. Consequently they are better adapted to many of our streams. The early prejudice against brown trout has practically disappeared because of their gamey qualities. They are more difficult to take than brook trout, which fact extends the fishing over longer periods in streams stocked with these fishes.

During the biennium a total of 91,849 two-year-old brown trout has been raised and liberated in suitable streams open to fishing. Fingerling brown trout numbering 112,659 have been liberated also in the smaller streams tributary to brown trout waters.

### Rainbow Trout

Rainbow trout, like the brown trout, are very hardy and make the best growth during their second year. They are not adapted to many streams and seem to do well only in rivers which flow into large deep ponds or lakes.

In 1934 a number of rainbow trout were planted in a few cold spring water ponds which were carefully selected for this experiment. In each case, the trout remained in these ponds and furnished excellent fishing, proving very popular with the sportsmen. The planting of rainbow trout in these and other suitable ponds helps to relieve the congestion on streams and will be continued.

A total of 47,775 two-year-old rainbow trout has been planted during the biennium in addition to 80,414 fingerlings.

### Distribution Methods

In spite of high water and poor weather conditions, anglers generally agree that the trout fishing season of 1934 was better than the previous season or for several years. This result was secured not by planting more trout but by a better distribution of a smaller number of trout of larger size and of greater average weight than previously. In 1933, the total of all adult trout planted was 214,637, weighing 45,750 pounds. In 1934, only 165,238 adult trout were planted but their total weight practically equalled that of the trout planted in 1933 (45,115). They were more carefully planted and more widely distributed.

The changes in the planting program were based on the data secured from the trout tagging experiment; also the fact that all trout were distributed by the employees of this Department with no information being given out regarding the location of any plantings or the number planted in any stream, gave every license holder an equal opportunity and contributed much to the sport of angling.

A list of all the streams in the state in which trout are found, indicating the streams which have been planted with trout during the past four years (1930-1934) is included in the appendix. The name given to each stream is the official name as authorized by the Legislature and the only name which is recognized by this Department.

A map showing all the streams in the state with their official names has been prepared by this Department. Copies of this map may be secured on application to this office at a cost of two dollars to cover expenses of production, handling and mailing.

A separate map showing the ponds in the state, with their official names as recognized by this Department is also available on application to this office at a cost of two dollars.

**THE COMMERCIAL AND MARINE FISHERIES**FRANK N. BANNING, *In Charge*

The State Board of Fisheries and Game is charged with responsibility for the conservation of all forms of wildlife including salt water fishes and crustaceans but not including the shell fishes for which the Shell Fish Commission is responsible.

Only a few of the salt water fishes are found in Long Island and Fisher's Island Sound and our jurisdiction over them ends at the State line. Of these the migratory mackerel and bluefish and the anadromous shad and striped bass are most important.

Bluefish and striped bass have been practically absent from our waters for many years. Recently they have returned, furnishing excellent sport and food to large numbers of people and employment to many commercial fishermen.

It is encouraging to note that most of the commercial fishermen no longer believe that the supply is inexhaustible and that they are seriously concerned about the conservation of these fishes. They have also come to realize that the bluefish particularly has value as a sporting game fish equal to its value as a strictly commercial fish. So long as bluefish remain in the Sound in sufficient abundance to attract sportsmen, many fishermen are assured of a better revenue from the use of their boats for sport fishing parties than for straight commercial fishing.

**Bluefish and Mackerel**

There is little that can be done in our part of Long Island Sound to maintain the supply of fishes whose habits are so distinctly migratory as the bluefish and mackerel. This applies as well to every other state. The conservation of such fishes must depend on a cooperative effort between the states concerned and can be managed to best advantage by the Federal government through the U. S. Bureau of Fisheries.

Since the life history of these species is not well-known in spite of many theories, the first and most important step to be undertaken is a thorough study of their habits and migrations. Until such information is at hand any restrictions which may be imposed or constructive efforts which may be undertaken by any state are little more than trial shots in the dark.

To provide for such studies by the U. S. Bureau of Fisheries, a Federal salt water fishing license similar to the duck stamp has been proposed and finds favor in many quarters.

It is probable that the protection which our laws have afforded the herring or "buckie" in our coastal streams has been an important contribution to the food supply of bluefishes and other salt water game fishes.

**Striped Bass**

The striped bass like the bluefish has returned to some of our coastal waters after a long absence. No one knows exactly why they disappeared



Shad Fishing With Rod and Reel Is a Popular Sport on the Salmon River.



The Salmon River at Leesville Power Dam Showing Anglers and the State Hatchery at Left Where 20,100,000 Shad Were Hatched in 1934.

or what caused them to return. The habits of these fishes in our Atlantic coastal waters are not well-known in spite of many theories. Our laws give them little protection and permit the catching of them during their spawning season although just when that is or where spawning takes place is not known.

Funds should be made available to the U. S. Bureau of Fisheries for a study of this valuable game fish so that intelligent conservation measures may be applied.

### Shad

The propagation of shad in the past is now showing definite results in an increased catch each year. On the theory that shad return to their native spawning grounds when four years old, it was predicted in the last biennial report that there would be a big run of shad in the year 1933 since the distribution of fry reached its peak in 1929.

A large number of shad returned in 1933 as predicted and a total of 12,270,000 eggs were taken of which 9,170,000 were hatched and distributed as fry.

This was an increase of 2,496,000 over the previous year in spite of the fact that the number of eggs taken from the Farmington River was very small and the hatch very poor. The hatchery on the Farmington River was definitely abandoned immediately following the 1933 season because of the polluted condition of the river which has been thoroughly discussed in previous reports.

In 1934, shad were so abundant that the commercial fishermen had difficulty in disposing of the large numbers caught. With operations confined to the Salmon River we were successful in hatching and distributing 20,100,000 fry which again exceeds the previous records of 1929 and 1933.

It now appears certain that the restoration of shad in the Connecticut River has been definitely accomplished. It can be maintained permanently only so long as the Salmon River remains undisturbed and unpolluted. That is the key to the whole situation since the Salmon River is the last remaining stream of any size in the state which has not been completely ruined for shad as well as for many other fishes.

The fascinating sport of fishing for shad with rod and reel has attracted a great many people to the Salmon River at Leesville where the hatchery is located.

### Smelt

The smelt work has been continued at the Westport and Noank Stations with an encouraging increase each year during the biennium, reaching an all time record of 54,207,600 fry planted in 1934 in spite of extremely cold weather and icy streams which are generally considered unfavorable conditions. The previous record was 52,000,000 fry planted in 1928. Many of the commercial fishermen recognize the value of this work and our success in recent years has been due largely to their co-operation in supplying brood stock.

Year	Smelt Taken	Eggs Taken	Fry Planted	Adults Planted
1933	758	20,520,000	12,400,000	228
1934	2,893	71,064,000	54,207,600	1,175

### Flatfish

In 1933, the marine hatchery at Noank procured 3,017 flatfish for brood stock from the commercial fishermen. From this stock 345,765,000 flatfish fry were hatched and liberated. The brood fishes were also liberated after spawning.

In 1934, most of the commercial fishermen were working on starfish elimination on oyster beds and did not start fishing for flounders until after the spawning season. Captain Fred Burdick of Avondale, who operates nets in Little Narragansett Bay, both in Rhode Island and Connecticut, was the only fisherman from whom brood stock could be secured. Consequently, only 101,397,832 flatfish fry were hatched and released in 1934.

The number of flatfish which can be hatched at the marine hatchery is limited only by the amount of brood stock which can be procured from the commercial fishermen. Many reports of a noticeable increase of young flatfish in our bays and rivers have been received since the flatfish program was adopted.

### Lobsters

Due to the increase in the rearing capacity at the marine hatchery in Noank and the cooperation of the lobster fishermen plus some changes in the methods of feeding, we have increased the output of this hatchery from 130,691 fourth stage lobsters in 1933 to 301,871 fourth stage lobsters in 1934.

Young lobsters when first hatched from the adult, float on the surface of the water subject to the vagaries of wind and tide, a natural food for all predatory fishes and quickly destroyed by oil and other surface pollution. Under natural conditions lobsters reach the fourth, shedding or diving stage, in five or six weeks. Reared in a hatchery this period is approximately twenty days. Thus, by the method developed in this State at our marine hatchery by Captain Frank N. Banning, the young are protected until they reach the stage where, when placed in shallow water, they quickly go to the bottom where they find protection by hiding in crevices and weeds.

Since lobsters do not recognize state boundary lines and since the principal lobster grounds are in New York State, this work also benefits the lobster fishermen of Fisher's Island and Long Island. In fact, it is proving of greater benefit to them than to our own Connecticut fishermen because the laws of the State of New York have set aside an area of seven square miles of water surrounding Fisher's Island and extending towards Long Island for the exclusive use of New York commercial lobstermen from which all Connecticut lobstermen are barred. Efforts to have this unfriendly and unfair discriminatory legislation repealed have met with no cooperative response from the New York authorities concerned.

### **Blue Shell Crabs**

During the seasons of 1932-1933 blue shell crabs were extremely numerous in our coves, bays and creeks along the shores of Fisher's Island Sound and Long Island Sound. This condition gave every reason to believe that in 1934 we would have more blue crabs than ever before.

During the extremely cold winter of 1933-1934 thousands of crabs were killed by the unusual freezing of shallow coves and bays where the blue crab spends the winter lying dormant slightly buried in the mud. Consequently, in 1934, blue crabs were very scarce. They will become numerous again after two or three mild winters.

### **Inland Commercial Fisheries**

Commercial fishing for carp, suckers and bait fishes is permitted in certain rivers and in Lake Zoar under the supervision of this Department. The cooperation of many of the commercial fishermen in saving and turning over to this Department the game fishes which are taken in their nets is valuable in furnishing brood stock for planting in other inland waters. If these fishes are not turned over to the Department the regulations require that they be returned at once to the waters from which they are taken.

## THE DIVISION OF WILDLIFE RESTORATION

ARTHUR L. CLARK, *Acting Chief*

### Federal Programs

The outstanding development in the field of wildlife restoration during the biennium has been the recognition which the Federal government has given to the fact that wildlife plays an important part in furnishing opportunities for inexpensive healthful outdoor recreation and for employment for a large number of people.\* This recognition has attracted public attention and encouraging support for the many wildlife restoration projects which have been undertaken in Connecticut and elsewhere.

Through the influence of the national policies and programs the conservation of the natural resources of this country has been advanced further during the past two years than during any previous twenty-year period.

The organization of our youth in forest camps and their employment in the work of forest-wildlife restoration has met with unanimous endorsement. The results accomplished in many directions by the Civilian Conservation Corps has justified the effort and expense. The particular benefits to wildlife restoration in Connecticut are outlined on page 87.

President Roosevelt paid a signal honor to the wildlife restoration program of Connecticut when, in December, 1933, he requested our Chairman, Thomas H. Beck, to serve as Chairman of the President's Committee on Wildlife Restoration. The other members appointed to serve on this Committee were Jay N. Darling, noted cartoonist and member of the Iowa State Fish and Game Commission, and Aldo Leopold, Professor of Game Management at the University of Wisconsin. The purpose of the Committee was to study a tentative program of wildlife restoration which Mr. Beck had previously submitted to the President and to make definite recommendations for carrying out the plan.

The Committee completed an exhaustive study within a period of about sixty days and promptly submitted a report which resulted in the allocation of \$8,500,000 to the Bureau of Biological Survey for the purpose of making a start on the program as recommended.

The funds were allocated in part from appropriations to the Federal programs of land utilization, employment and relief since the wildlife restoration program embraced all of those interests. Shortly after the publication of the report, Mr. Darling was appointed Chief, Bureau of Biological Survey and the Committee was discharged.

During the summer of 1934 great progress has been made in carrying out the recommendations of the President's Committee. Since the waterfowl situation was most serious, special attention has been given to the acquisition and restoration of important waterfowl breeding areas which have been

\*Approximately 80% of the arms and ammunition and much of the fishing tackle used by sportsmen is manufactured in Connecticut.

destroyed by drainage. These are located mostly in the west although a few important wintering areas for waterfowl will be secured and placed under management in the south. It is expected that the acquisition of one million acres will have been completed before March 1, 1935, at which time it is hoped that additional appropriations will be made for continuing this important constructive program.

Another important development was the passage of a Federal law which requires each person wishing to shoot waterfowl to contribute one dollar per year for the protection and restoration of waterfowl by the U. S. Bureau of Biological Survey. This contribution is made by the purchase of a so-called duck stamp to be attached to a state hunting license. The funds available from this source will be used mostly for the purchase and management of waterfowl breeding and resting areas.

The Federal Emergency Relief Administration also contributed to the restoration of wildlife by furnishing labor for several projects proposed by this Department and conducted under our supervision.

The Federal program for the acquisition of submarginal lands and the employment of those needing relief in the development of such lands for forestry, wildlife restoration and related interests constitutes another important development of far reaching consequences.

All of the Federal programs having to do with wildlife restoration are based on the permanent improvement of environments for wildlife so as to encourage natural propagation and to provide for its subsistence and survival at all seasons without artificial aids. This is one of the most important features of the combined programs since it calls attention to the value of depending on natural methods to assist the forces of nature.

The impetus given to long term planning by the creation of national and state planning boards is another development of far reaching importance to wildlife restoration as well as to the conservation of all other natural resources. The demand for organized factual data on which such planning must be based has resulted in the collection of a vast amount of valuable material which has not been available previously. A consideration of these data in connection with the development of long term plans should result in a closer cooperation between all state and federal departments and a better coordination of their interests and activities.

The Connecticut State Planning Board is assured of the full cooperation of this Department in the preparation of such long term plans and policies for the State of Connecticut.

### **State Programs**

Previous to this biennium the game restoration program consisted mostly of buying and releasing pheasants. Most of the funds derived from the sale of all hunting and trapping licenses available for constructive work, outside of the allotment for the warden service, were devoted to the purchase of pheasants.

A separate Division of Game Restoration was created in May, 1932, near the close of the last biennium. Since that time the organization has been greatly expanded and broadened in scope so that its activities now include a definite program and allotment of funds for each important game bird and quadruped.

The combined projects represent a balanced program covering all the interests of the license holders in approximate proportion to the importance of each group. This relative importance was determined by an analysis of the reports made by sportsmen of the game killed in 1932. Although the study covered only the two counties of Hartford and Middlesex the results represent a fair cross section of the entire state. The following figures are based on the number who actually reported game killed, not on the total number of licenses issued.

Of those reports, 64% show one or more pheasants. Of these, 60% report killing other game birds and 28% report game quadrupeds, mostly rabbits and squirrels. Only 12% report killing pheasants only.

Of those reporting game killed, 83% report one or more rabbits or squirrels. Of these, 79% also report killing other game and 21% report killing only rabbits and squirrels.

The reports show that 41% killed grouse and woodcock and that 95% of these also killed other game. Only 22% report waterfowl and of these 80% report other game birds, 6% report game quadrupeds, leaving only 14% who shoot ducks only.

Only 5% report killing fox and of these 87% report other game, leaving only 13% classified as "purists." This is only .6% of the total number reporting game killed. The raccoon hunters represent only 2% of the total and of these, 37% report raccoon and other game, 28% report raccoon and fox and 35% report raccoon only.

#### Allotment of Game Funds

The broadening of the game program has necessarily drawn on funds which otherwise might have been used for the purchase of pheasants. However, due to the reduced cost of pheasants in recent years and to certain changes in the pheasant purchasing methods employed, it has been possible to provide for other programs with no material reduction in the average number of pheasants annually liberated.

Improvements in the quality of birds purchased and in the methods of liberation should result in an increase in the number of pheasants killed even if the number liberated should be reduced, provided that their food and cover requirements are maintained and provided predators are kept in reasonable balance.

A study of the records of pheasants liberated each year since 1913 and of the records of pheasants killed by sportsmen since 1923 when such reports were first required, gives support to the new program and policy of giving increased attention to the improvement of natural conditions.

### Results of Pheasant Distributions

In 1926 about 6,000 pheasants were liberated and 30,000 were killed. This increase of 24,000 birds, (400%), over the number liberated represents the increment from natural propagation at no cost.

The records for 1929 show 17,000 birds liberated and 41,000 killed. The increase remains at 24,000 but the percentage of increase of birds killed over the number liberated drops to 141%.

In 1932 the liberation of pheasants reached the peak of 23,176 birds. The killed was only 42,421, an increase of only 19,245 birds killed (83%) over the number liberated.

At the present average price of \$2 per pheasant these figures show that an expenditure of \$12,000 in 1926 resulted in a kill valued at \$60,000,— a gain of \$48,000. An expenditure of \$46,000 in 1932 resulted in a kill valued at \$84,000 or a gain of only \$38,000. Thus in 1932 the expenditure of \$34,000 more than in 1926 resulted in an increased kill of only 12,000 birds valued at \$24,000. It is doubtful if this number of pheasants distributed over all the pheasant cover in the state makes sufficient impression on the shooting conditions to justify the cost.

Exception may be taken to these and other figures based on reports of game killed on the theory that the reports by sportsmen are incomplete and inaccurate. However, in view of the large number of reports it is reasonable to believe that they represent a fair sample of the whole and that when reduced to a common level or considered on a percentage basis the figures correctly measure relative fluctuations in the annual kill of game and in the status of game populations over a period of years. It is reasonable to assume also that the same degree of error occurs each year and that the high estimates counterbalance the low. Consequently it is probable that the corrected figures for any year closely approximate the actual kill of game and offer a reliable basis for estimating the status of game populations.

It appears that in the liberation of pheasants we have passed beyond the point of maximum efficiency per bird liberated or per dollar expended. It is probable that maximum results can be obtained by the liberation of from eight thousand to ten thousand birds per year if the funds saved can be devoted to the improvement and management of game covers.

In view of the facts secured from this study the Board proposes to gradually reduce the number of pheasants liberated each year until the point of maximum efficiency has been reached. The funds made available by that reduction will be used in part for the improvement of food and cover conditions and the control of predators so that the wild stock on hand, supplemented by the liberation of birds mostly in advance of the breeding season, will maintain the maximum stock of birds which each area is capable of supporting.

### More Attention to Native Game

The adoption of this policy is supported also by the fact that less than forty per cent of the total area of the state offers conditions which are suitable for pheasants. The natural range of pheasants is confined to open



agricultural land in valleys in the vicinity of swamps with some winter cover and overgrown pasture on the nearby hillsides. The total area of the state, however, is 56% wooded. This percentage increases in rural areas and reaches 70% on the 870,000 acres which are classed as idle unproductive land. Consequently we can no longer justify spending ninety per cent of the game restoration funds for pheasants which find suitable conditions on so small a portion of the total area of the state.

The woodland area is potentially grouse and woodcock cover and should be managed and improved as far as possible for those birds. The ruffed grouse or partridge has survived these years in substantial numbers although nothing has been done to encourage it except to define the season when it may be hunted and to restrict the bag to two per day and fifteen per season.

The bag limit and season for ruffed grouse is the same as that provided for pheasants for which birds thousands of dollars have been spent for every dollar spent for the restoration of ruffed grouse. In spite of that neglect the records show that the average annual kill of grouse is about one-half the average annual kill of pheasants.

A similar situation applies to rabbits except that the number killed each year is more than twice the number of pheasants.

The methods employed for the restoration of grouse, woodcock and rabbits are limited to the improvement of natural food and cover and the control of natural enemies. The adoption of such natural methods will improve conditions for all kinds of game including pheasants.

It is true that the propagation of grouse and rabbits in captivity has been accomplished. It is improbable, however, that this method can ever be carried to the point where grouse or rabbits can be raised cheaply enough or in sufficient numbers to warrant their liberation except as breeding stock on depleted areas which are placed under management and closed to hunting at least until the stock has become thoroughly established.

### The Game Cycle

Aldo Leopold, Professor of Game Management, University of Wisconsin,\* has called attention to the fact that the species of game which are subject to sharp periodic (cyclic) fluctuations in abundance, such as grouse and rabbits, are usually incapable of starvation because they subsist on buds or other vegetation. However, they are extremely susceptible to disease and are very difficult to propagate in captivity.

On the other hand, Leopold notes that the game birds which are the least susceptible to the game cycle—quail and pheasants—are easy to propagate in captivity but often die off in hard winters since they subsist on seeds. They are subject also to a limit of population density which game managers call the "saturation point."

\*Aldo Leopold—"The Game Cycle—A Challenge to Science." National Farm and Home Hour, N. B. C., Aug. 17, 1934, reprinted in *Outdoor Nebraska*, Vol. IX, No. 4, Autumn, 1934. Published by the Nebraska State Game Forestation and Parks Commission, Lincoln, Nebraska.

"Quail especially simply 'refuse' to tolerate a density greater than one bird per acre, and this limit is apparently about the same in all states, regardless of how ideal the food and cover. Likewise, in such ideal food and cover, the quail density seldom drops very far below saturation.

"On ideal grouse range, on the contrary, the fluctuations are if anything more violent than on poor range. Apparently the cycle and the saturation point are two alternative modes of guarding against overpopulation, but the mechanism of both is equally obscure."

#### Practical Scientific Research

It should be understood, however, that reliable information about the habits of game birds and quadrupeds and their requirements for existence is very incomplete in most cases. Hundreds of volumes have been published describing the plumage of birds. Thousands of laws have been passed for their protection. Millions of pheasants have been raised and liberated. But only during the past ten years has anyone given serious study to the natural environments required for the survival and increase of any species.

Attention was first called to the importance of such studies and to the practical value of such information in planning game management practices when Herbert L. Stoddard announced the first results of the quail investigation which he conducted in the south.

This study, which extended over a period of five years and is still being continued, was made possible by contributions from a group of sportsmen who were interested in improving quail shooting on their preserves in Georgia.

The results of the quail investigation were so apparent that funds were promptly made available to Dr. Arthur A. Allen of Cornell University to extend a study of ruffed grouse which he had undertaken in spite of a lack of public interest or support. The ruffed grouse investigation has now been taken over by the Conservation Department of the State of New York under the direction of Dr. Gardiner Bump. Although this investigation is incomplete the information available to date is of great practical value in planning our program of grouse restoration.

These studies were followed by many others covering practically every species of native game, including woodcock as well as the introduced species, pheasants and Hungarian partridge. Only the quail investigation has been completed and the results published but as information becomes available from the other studies it is being used in planning management programs in Connecticut.

This information is being disseminated in Connecticut as widely as possible so that individuals may take advantage of it in improving game conditions on their own properties and so that the public may better understand the reasons for the methods which are being employed by this Department.

This is important since it is inevitable that a state department which derives its revenue from a separate tax on a special group or interest can

adopt new methods and make progress in new directions only so far and so fast as the public will support those policies. Such support may be expected only when the public understands the problem and the reasons for the policies.

### **Cooperation Is Essential**

As our methods change from complete dependence on restrictive laws and on the liberation of artificially propagated game to include the management of land to produce a crop of game, it becomes evident that the new program must be based on cooperative effort. It is obviously impossible for this Department to establish game management practices on all of the 3,194,000 acres of land in Connecticut, particularly since all but 202,854 acres (6.3%) is privately owned.

There are many sportsmen who would spend substantial sums for the intensive development of game on limited areas if given the incentive to do so. That incentive must be a longer season and a bag limit based on the amount of game actually on the property resulting either from the liberation of game or from game management practices.

Our laws governing daily and seasonal bags and open seasons attempt to restrict the kill of game to the number which represents the normal surplus. They seek to avoid a depletion of the game supply by over-shooting.

The season and bag limit laws do not accomplish their purpose because sufficient reliable information regarding the actual status of game is not available to permit the establishment of correct bag limits and seasons by legislative act in time to have them effective before the conditions are again changed. They are ineffective because they apply equally to all the areas in the state whereas the status of game varies not only from season to season but from one locality to another.

There is nothing to prevent an unlimited number of license holders from crowding into a single area where game happens to be abundant and by over-shooting to completely exterminate all game on that area. Thus the annual kill and the resulting status of game is entirely a matter of chance.

However, the bag limit and season laws probably represent the best approximate estimate of the maximum privileges which can be permitted generally throughout the state without too great danger of depleting the supply. There is no logical reason, however, why the same limitation should be applied to an area where private effort and expense has accomplished a concentration of game far beyond the average population of areas which are less intensively managed and developed for game.

### **Shooting Preserves**

Acting on this premise, for the purpose of encouraging private initiative in game restoration, by authority granted under Section 3157, the Board issued regulations in 1933 permitting the establishment of private shooting preserves and carefully defining the requirements under which certain shooting

privileges might be enjoyed in excess of those provided by law for unmanaged areas. These regulations apply only to pheasants.

In brief, the longer shooting season and other privileges permitted under these regulations are dependent on the liberation of pheasants at the rate of one bird per acre on well-defined areas of not less than five hundred acres. The regulations are designed to encourage if not to require the adoption of natural methods of game management, particularly predator control, to supplement the liberation of artificially reared birds.

The preserves are necessarily developed more intensively than this Department can hope to develop any areas under its jurisdiction, at least at the present rate of license fees. It is inevitable that game will spread from the well-managed private preserves to surrounding areas where those who cannot afford to pay as much for their sport may have an opportunity to enjoy some degree of better shooting than can be provided throughout the state for the three-dollar license fee.

It is also inevitable that predators in the vicinity will drift into the preserves where game is plentiful. The preserves will serve as centers of predator control since they will have to be under management with a game-keeper employed in order to return a dividend in game at a reasonable cost.

There is no danger that private preserves will be extended to include any substantial portion of the area of this state so long as they are required to operate under the regulation of this Department. The number of such shooting preserves is automatically limited by the number of groups who can afford to liberate birds at the rate of one per acre on areas of not less than five hundred acres. During this biennium permits have been issued for only nine preserves totalling forty-five hundred acres. This represents an insignificant portion of the total area of the state.

#### **Property Owners Will Cooperate**

Although the majority of property owners will not develop their land intensively for game, they are very glad to adopt simple practices of game management if information on the subject is made available to them and if they are given reasonable assurance that the game produced on their land will not be depleted by over-shooting and that their property will not be damaged. A marked improvement of game conditions can be accomplished with only a slight modification of existing farm and woodlot practices.

The plan of cooperation with property owners described on page 19 offers the desired protection to property and the regulation of shooting so that the kill will not exceed the annual surplus crop. This plan leads directly to the adoption of simple practices of game management on private lands. The services rendered by this Department offer all the incentive which the great majority of property owners require. The wardens who patrol the area are prepared also to give information on the subject and to assist in other ways.

#### **Game Management in Connecticut**

The purpose of game management is to maintain or create for any desired species of game those environments which represent the most ideal condi-

tions of food and shelter and of balance in relation to other species so that the native or planted stock of game on any area may survive throughout the four seasons of the year and may increase by natural reproduction up to the full capacity of that area to support such game.

Practical suggestions for improving the farm environment for wildlife are contained in Farmers' Bulletin No. 1719, by Wallace B. Grange and W. L. McAtee, U. S. Bureau of Biological Survey, from which the following quotation is taken:

"The most important natural factor bearing upon wildlife management is the amazing reproductive capacity of living things. Applied to game on the farm, if a pair of quail had complete success in rearing one brood of 14 chicks each season, (assuming an even division of the sexes and no fatalities) there would be 128 birds at the end of the second year, 1,024 the third, 8,192 the fourth and 65,536 the fifth, and so on.

"Thus to aid efforts to increase wildlife, there is available a reproductive force almost explosive in its intensity. Unchecked, there would soon be more of everything than the environment could support. Like the trees in a wood, however, in reaching for their place in the sun, the various groups overlap; the overlapping parts obliterate each other and none attain complete domination. Man can do some planting or pruning, achieve some additions or eliminations so as to favor desired groups at the expense of the undesired; this is the essence of wildlife management."

The extent of increase of any species is limited by many factors of which the supply of food and protective cover and the control of predators are of great importance because they are controllable by man.

### Food

It appears that the food supply for game in Connecticut is sufficient to support a much larger population during the summer and early fall than during the late fall and winter months. Consequently, if it were not for the reduction in game by shooting during the fall months, the winter loss from natural causes would be much greater than at present and the final result would be practically the same. Incidentally, this observation illustrates the fallacy of advocating closed seasons as a means of restoring game except when the supply has become dangerously depleted.

An important objective of game management in Connecticut, therefore, is to build up the winter food supply so as to carry a larger amount of game through the winter and into the breeding season in good condition for maximum reproduction. This can be accomplished permanently by planting food-bearing shrubs in hedgerows and along the edges of woods. A list of shrubs suitable for this purpose will be found opposite page 48.

Until the shrubs have become established and are producing an abundant food supply, the winter feeding of grain, particularly for quail and pheasants, and the feeding of alfalfa or similar crops for rabbits must be continued. In-

formation on winter feeding and the establishment of shelters is available in Miscellaneous Publication No. 159, U. S. Department of Agriculture, Washington, D. C.

### Protective Cover

A protective cover of trees within easy range of the feeding and rearing areas is needed to furnish safe roosting places for game birds and to provide shelter for all game during severe storms. Ground cover is needed to provide safe hiding and resting places and protection from natural enemies.

Evergreen trees offer the best shelter from the elements but over most of Connecticut they are scarce in comparison to deciduous hardwoods. There are miles of hillsides in Connecticut covered only with hardwoods, mostly scrub oak, which are practically barren of game. Such solid hardwood areas should be cut clear in strips or blocks and planted to pine with open spaces separating the plantations from the hardwood growth. This gives the much desired combination of a mixed forest with numerous edges and open spaces.

The open spaces affording sunlight are essential for nesting and rearing as well as for growing food patches and tangles of protective ground cover. This management of woodland is being carried out and demonstrated on our state forests.

On open agricultural land, hedgerows with ground cover should be left uncut and unburned to furnish safe lanes of travel for pheasants, quail and rabbits. If food-bearing shrubs, seeds and strips of grain are provided near such hedgerows and at the edges of woods, game will be able to feed in reasonable safety. An abundance of food in an open space without ground cover or without safe lanes of travel to and fro will not be used by game except as a last resort, and, if used, will result in serious loss from predators.

### Predator Control

The control of predators is an important part of game management. Its objective is merely to maintain a balance between the predators and their prey. It is recognized at the start that all predators have their place and their important function in the natural scheme of things. It is conceivable that on some areas predator control or management may consist of increasing certain predators as well as decreasing others.

At the close of this biennium, we find this situation: Game birds, particularly grouse, are at the peak of their abundance and due for a sharp decline within the next two-year period. Rabbits are probably just passing their lowest point and are due for an increase. This may be offset, however, by the fact that fur bearers, particularly bobcat, fox, skunk and weasel, are now increasing. Their rise is rapid because the checks on their increase are not as great as are the checks on the increase in the number of game birds or rabbits.

The balance between species which obtained originally has been upset in many directions and destroyed. To establish a new balance in accord with existing conditions is difficult for many reasons. First, the true relationships

between species are not yet thoroughly understood. As a rule, however, the environments have been made less favorable for game birds and consequently more favorable for predators, which are extremely hardy and adaptable to changing conditions. Second, many interests are concerned and represented by different groups such as the trappers, fox hunters, nature lovers and those interested only in the humane aspects of trapping.

The controversy between the fox hunters, bird hunters and trappers is as old as is the sport of hunting. It will be settled satisfactorily only when the areas of states, counties and townships become subdivided into game management areas with practices determined for each small area depending on the character of the area and the interests of the landowners or lessors.

#### **Supervised Predator Control**

An application of this plan is found in the management of the State-owned areas which come under the jurisdiction of this Department. On such areas, the most experienced trappers available are employed as agents of the Board. Their activities are carefully supervised and no difficulty is experienced with any of the groups which are in constant conflict regarding the situation on unmanaged areas.

Trapping is the only practical means of controlling furbearers and predators. Unless they are controlled they will become so numerous as to cause great destruction of other valuable wildlife. This has occurred in Massachusetts where an anti-steel trapping law was passed several years ago. The increase of predators in Massachusetts since that time has been so great that in the northern counties of Connecticut we have felt the effects of a southern movement of bobcats and foxes caused by their uncontrolled increase and declining food supply to the north.

#### **The Public Interest in Predator Control**

Sportsmen of Connecticut should make every effort to avoid a situation in Connecticut similar to that which obtained in Massachusetts when the anti-trapping law was passed by popular referendum. It was the influence of women which made funds available for the successful anti-steel trap campaign. It was the women's vote which settled the matter at the polls in very positive terms.

During that campaign, the sportsmen of Massachusetts were so busy arguing among themselves that their influence in this matter was rendered entirely impotent. The funds which they contributed in the campaign were measured in pennies as against the dollars contributed by the opposing group.

The sportsmen of Connecticut can no longer afford to assume that the sports of hunting and fishing are designed for their exclusive benefit. Women must be encouraged to take an active part in the sports of hunting and fishing to the end that they may better understand the sports which men so thoroughly enjoy and the problems connected with fish and game restoration.

#### **Women in Sports**

To encourage women to take a more active interest in the sport of fishing, a trout stream was leased in North Branford and maintained for their ex-



Miss Edith A. Stoehr, First Woman Warden Uniformed and Assigned to Regular Duties, Checking the Catch on the First State-leased Stream Reserved for Women. Branford River, Connecticut, 1932.



—Photo by Hartford Courant.

Many Women Enjoy Handling Their Own Bird Dogs and Shooting Game on the First State-Leased Shooting Ground for Women. Farmington, Conn., 1932.

clusive use in the spring of 1933. Miss Edith A. Stoehr was appointed warden and assigned to the Branford River. In the fall she was assigned to the public shooting ground in Farmington of which a small portion was reserved for the exclusive use of women.

Miss Stoehr was the first woman to be uniformed and appointed to regular active duties as a game warden. She is particularly fitted for these duties which are mostly concerned with offering encouragement and instruction in the sports of fishing and hunting with particular reference to the skillful use of fishing tackle and firearms.

This action by the Board has met with encouraging response and many women have used these training areas. Since that time, Pennsylvania, New Jersey and other states have adopted a similar program and policy.

### Field Trials

The interest in better hunting dogs indicated by the increased number of field trials held in Connecticut is most encouraging. The events include competitive trials for bird dogs, coon dogs, beagles and foxhounds.

The Board offers every possible encouragement to such trials for the reason that a sportsman who finds interest and pride in the handling and working of a well-bred, intelligent hunting dog is likely to find more genuine pleasure and satisfaction on his hunting trips than one who must depend entirely on his own legs to find the game and solely on the results of his shooting for the measure of his sport.

We are encouraged and complimented by the fact that each year during this biennium the Championship Trials for New England Bird Dogs and the Brunswick Foxhound Trials have been held in Connecticut. In each case an area in Windham County has been selected for these trials.

The property where the New England Bird Dog Championship was held in 1934 has been placed under management and will be developed intensively for native game and pheasants for the exclusive use of these trials. The Board is cooperating in this project in the hope that the New England Championship Trials in Connecticut may come to be widely recognized as one of the most important bird dog field trials in the country.

### Pheasants

The plan of liberating pheasants has been revised gradually during the biennium so that starting with the fall of 1934 and in the future only legal cock pheasants will be liberated in advance of the shooting season.

The breeders from whom cock pheasants are purchased in the fall are required to hold for spring delivery at least an equal number of hen and cock pheasants in the ratio of one cock to three hens. These birds are liberated in advance of the breeding season.

Contracts are placed with these game breeders also to supply pheasant eggs for hatching. This assures first quality strictly fresh eggs which are delivered to sportsmen and farmers who offer to cooperate and who agree

to liberate all birds raised on land which is open to shooting. Eggs are supplied for this purpose from May 10th to May 20th. Each cooperator is furnished with complete simple instructions for the care of the eggs and birds.

This plan has been successful not only in the production and liberation of a large number of pheasants, eight to twelve weeks of age, but is stimulating an active interest and cooperation in the restoration of game among farmers and sportsmen.

The contract with the breeders who supply eggs for hatching also provides for the purchase of a small percentage and liberation of their pheasant breeding stock between May 20th and June 1st. Since these birds are in production they lose no time in making nests and laying a clutch of eggs. Observations of the release of such birds not later than June 1st indicate that their broods reach maturity before the opening of the season.

Pheasants are distributed in approximately equal numbers in each county. All birds are carefully liberated in most suitable covers as determined by the food and shelter conditions as well as by the condition of posted property. No birds are liberated on posted land or in open areas, if surrounded by posted land which offers good fall cover conditions. No birds are liberated within ranging distance (three to five miles) of any private shooting preserve where the public is excluded or where a fee is charged.

During the biennium we have purchased from game breeders and liberated 29,988 birds. Of these 6,112 were liberated as breeding stock in the spring of 1933 and 8,132 in the spring of 1934, all in the approximate ratio of one cock to three hens. In the fall of 1933, 5,863 cocks and 4,066 hens were liberated. In the fall of 1934, however, only cock pheasants were liberated, numbering 6,756. Included in the 1933 figures are 1,841 pheasants of approximately equal sexes which were reared from eggs distributed by this Department and liberated on lands open to public shooting. This is a production of 12.4%. In the fall of 1934 the distribution of pheasants reared from such eggs was approximately 3,675 or 18%. This makes a total of 16,941 pheasants liberated in 1933, 19,247 in 1934, giving a grand total of 36,188 for the biennium.

Attention has been given to the improvement of the sporting qualities of pheasants by establishing standards for game breeders from whom birds are purchased. There is no reason why the principles of selective breeding which have been applied to the development of superior strains of dogs, horses and other livestock cannot be applied also to the improvement of those game birds which are raised in captivity.

The standards of quality for pheasants and of sanitation for game farms adopted by this Department are designed to produce in a few generations a superior strain of wild sporting pheasant which will "hold" ahead of a dog and which will depend on its wings instead of its legs for protection. Such a bird will furnish better sport and will be harder to hit than the oversized, slow-flying, partially domesticated pheasants which have been liberated in the past. Such birds also will be more difficult to rear and therefore more expensive.

On application, this Department will supply a list of the game breeders in Connecticut who have adopted these standards, accepted our supervision and conformed to our requirements in the matter of quality and sanitation.

### Bobwhite Quail

The relative scarcity of quail in Connecticut, except along the Sound, during the past thirty years or more has resulted in the now firmly established notion that quail cannot survive our winter conditions. This is in spite of the fact that the original, former range of native quail extended to and included the southern portions of Maine, New Hampshire and Vermont.

Mr. A. E. Moss, Professor of Forestry, Connecticut State College, has secured data from records and questionnaires sent to old-time quail hunters from which he has prepared a map showing that quail were formerly found in all parts of the state except in the higher altitudes of Litchfield and Hartford Counties.

It is significant that the disappearance of quail from the northern counties of Connecticut and from states to the north followed shortly after the introduction of southern quail into these areas, starting about forty years ago. At that time no thought was given to the adaptability of southern quail to the food, cover and climatic conditions which obtain in the northern states. It is certain, however, that the southern birds crossed freely with the hardy, native stock and that quail survived and persisted until the severe winter of 1898\* when they became practically extinct except on Cape Cod, Massachusetts, and along the shore of Rhode Island and Connecticut.

The few quail which survived this storm increased until the winter of 1904-05, which destroyed 90% of all the quail that were left. The balance were exterminated during two hard winters which followed except in the milder climate of Cape Cod, eastern Rhode Island and southern Connecticut.

It is true that Forbush reports losses of quail during hard winters previous to the introduction of southern quail but in no case were these birds exterminated in any part of their natural range as they were following the introduction of southern birds.

Acting on the theory that quail can be restored over their former range in Connecticut if only hardy, northern quail are liberated, the Department secured a strain of such quail in 1932 and supplied them at cost to a number of game breeders in Connecticut who agreed to adopt certain supervision and regulation by the Department. A list of these game breeders will be supplied on request.

The Board hopes for the cooperation of all sportsmen in observing the law which prohibits the introduction or liberation of any live quail in Connecticut without a permit. Although the supply of northern quail is limited and the cost per bird is much greater than the cost of southern or Mexican quail, those who wish to experiment with the liberation of northern quail may secure them from the Department so far as the supply available will permit. No other quail will be permitted to be liberated in Connecticut.

\*"Game Birds, Wild Fowl and Shore Birds" by Edward H. Forbush, page 372.

In the spring of 1933 all quail of southern or doubtful origin available at the game farms in Connecticut were purchased and liberated in the four southern counties, total six hundred and five quail.

The severe winter of 1933-34 resulted in the loss of some quail even in the southern counties. This loss is really a gain, however, because it eliminated the weaker birds and only the hardiest quail remain for breeding stock. Four hundred and sixteen native northern quail were liberated in the four northern counties in the spring of 1934. Other northern quail will be liberated as fast as the supply of birds and funds available will permit.

#### **Ruffed Grouse**

The status of ruffed grouse and the program of grouse restoration which has been adopted has been covered in the general discussion above. Further details regarding the management of our state forests in the interest of grouse and other woodland game will be found on page 86.

#### **Woodcock**

The woodcock is a migratory bird which is found on upland areas frequently associated with ruffed grouse. No efforts have been made in the past to increase the supply of native birds by the improvement of cover conditions or to make any areas more attractive to flight woodcock. That is partly because no practical information regarding their requirements for existence has been available. A study of the woodcock is now being made by O. S. Pettingill under the direction of Dr. A. A. Allen, Cornell University. As the information resulting from this study becomes available it will be applied and tested in Connecticut on State-owned or leased areas which are naturally adapted to this bird.

#### **Waterfowl**

The waterfowl situation has been a highly controversial subject during this biennium. It is complicated by the migratory habits of birds, which has tended to make each individual and state shift responsibility for their protection and restoration. It is also complicated by the fact that shooting seasons and privileges are determined by regulations of the U. S. Bureau of Biological Survey, Department of Agriculture, Washington, D. C.

Because of the great interest in waterfowl at this time, the program adopted by the Department during the biennium is treated in some detail under a separate heading on page 69.

#### **Other Migratory Birds**

Rail shooting is a popular early season sport particularly along the Connecticut River where wild rice is found in abundance. A season opening September 15th instead of September 1st would probably improve the shooting conditions. Our efforts to control and, if possible, to eliminate carp in the Connecticut River and other waters in the state will help to conserve and increase the stand of wild rice on which plants these birds are largely dependent.

Snipe are found in Connecticut in such limited areas that they do not attract much attention generally. An increase in the natural food supply for

all birds and a better control of predators will be helpful to the conservation of these birds.

### Cottontail Rabbits

Cottontail rabbits are the most common and the most popular game in Connecticut. They are naturally prolific and when available in numbers constitute the principal food supply of predators. Consequently, rabbits are recognized as the key to the restoration of all other species of game.

Rabbits are subject to sharp periodic fluctuations which are closely associated with an infectious disease known as "tularemia." This disease is usually epidemic and fatal to rabbits and other wild rodents. It probably affects other mammals as well as game birds, particularly grouse. Man also becomes infected with this disease through contact with the raw flesh or blood of infected animals or by the bites of blood-sucking ticks and flies which have previously fed on animals infected with *Bacterium tularense*.

The U. S. Public Health Service reports that 3,653 cases of this disease in man were recognized in the United States from 1924 to 1932. These cases were found in forty-five states and resulted in one hundred and seventy-nine deaths.

The disease in humans has been traced to wild rabbits in every state in the Union except Connecticut, Massachusetts and Vermont. These are the only states from which no cases originating within the area have been reported. All of New England, however, is relatively free of the disease which has its greatest concentration in Ohio, Indiana, Illinois, Missouri and Kentucky.

In view of these facts and of other data on file in this office, this Board, cooperating with the State Board of Health, is unwilling to risk jeopardizing the public health or the welfare of our native wildlife by permitting the introduction or liberation in Connecticut of any rabbits or hares from any other state. Such introduction or liberation is also forbidden by the Acts of 1933, Chapter 103.

The Board also hopes to secure an agreement with the Game Commissions of adjoining states, particularly Rhode Island and New York, not to permit the liberation of any rabbits or hares within their borders. We are glad to report that the States of Massachusetts and Vermont are following the same policy as Connecticut in this matter.

Experiments with the propagation of wild cottontail rabbits have been conducted under the direction of this Department following the methods which have been advocated by the Game Commission of Pennsylvania. Although our experiments have not been entirely successful, they are being continued.

The rabbit restoration program must be based primarily on the improvement of natural conditions following methods suggested by Dr. R. E. Trippensee, U. S. Forest Service, who has just completed a comprehensive study of the cottontail rabbit from a game management standpoint.

The improvement of hedgerows to furnish protected communication lines from one cover or food patch to another with the establishment of additional

briar and food patches together with plantations of coniferous trees mixed with hardwoods are methods which will be adopted on areas where this Department has jurisdiction. Winter feeding will also be tried out experimentally to take care of the food situation until the permanent plantings become established.

The most important aid which has been rendered to rabbits and to sportsmen who wish to enjoy better rabbit shooting was the passage by the last Legislature of the law which prohibits the use of ferrets in hunting rabbits. Although Connecticut was one of the last states to abandon this practice, the action was necessary to prevent the total extermination of an already depleted supply and because the use of ferrets, particularly for hunting at night, was freely and grossly abused.

It is probable that the breeding stock which remains is sufficient to accomplish a complete restoration of rabbits and good shooting if these prolific animals are given half a chance. If a single pair of rabbits had complete success in rearing two litters of six young each season with no fatalities, there would be 98 rabbits at the end of the second year, 686 the third, 4,802 the fourth and 33,614 the fifth, etc.

#### **White Hares**

White hares find suitable environment in Connecticut only in a few areas in the northern part of the state where the climate and other conditions are similar to the northern zone where these animals thrive. Parts of Connecticut represent an extreme southern limit of the natural range of white hares. They will survive in those areas under management but cannot be expected to become abundant or to extend their range to other parts of the state where similar conditions and northern environments do not obtain.

#### **Raccoons**

Raccoons in common with other fur bearers are now on the increase due to natural causes except in the northwestern portion of Connecticut where bobcats, which feed on raccoons, have greatly increased.

The raccoon restoration program was inaugurated in 1933 under the direction of Leon F. Whitney of New Haven. Mr. Whitney is a Director of the American Eugenics Society, author of several books on breeding and co-author of one entitled "The Raccoon." He is an enthusiastic coon hunter with practical experience in raising raccoons many of which have been used for experimental purposes at Yale University.

Shortly after Mr. Whitney's appointment in 1933, eleven raccoon sanctuaries, comprising 3,726 acres, were established. Seven of these are located on state parks and the balance on similar areas which are necessarily closed to hunting. During the biennium thirty-four raccoons have been liberated on these areas for breeding stock.

For a number of years attempts have been made to raise raccoons at our Shade Swamp Sanctuary in Farmington and at our headquarters on the Pachaug Forest in Voluntown. These efforts have not been successful. However, the method of raising raccoons at Shade Swamp Sanctuary are being re-

vised and new pens are being built on fresh ground under the direction of Mr. Whitney and the advice of Mr. Acil Underwood of Fowler, Michigan.

A breeding stock of black raccoons, mostly donated by Mr. Whitney, has been established. The objective is to cross the black raccoons with native gray raccoons which will result in a superior dark strain having a greater pelt value than either the black or the average gray. The dark raccoons will be liberated at first on raccoon sanctuaries where they, in turn, will mate with the wild gray raccoons and produce offspring of superior quality. In this manner the value of our raccoon fur resources will be increased.

In short, since the program calls for the liberation of raccoons to increase the supply for hunting or trapping, an improvement of the quality of fur can be accomplished by the liberation of superior breeding stock at no additional cost.

An important part of the program calls for cooperation on the part of property owners and foresters, as well as coon hunters themselves, in leaving "den trees" uncut. This, however, is largely a matter of disseminating information regarding the importance of leaving a few old dead trees in each woodlot to furnish homes and resting places for raccoons as well as for birds which nest in such locations.

#### Gray Squirrels

Gray squirrels reached their peak of abundance in the fall of 1933 at which time a distinct migration was noted from east to west across the state. The heaviest migration occurred on Sunday, September 24th, when thousands of squirrels were observed swimming from east to west across the Connecticut River as well as across lakes and ponds in the central part of the state.

Previous to this migration a great many squirrels were observed near roads and many were killed on the highways. Also, a few dead squirrels with bare patches in their fur and with "rat tails" were found in the woods, mostly in Fairfield County, and were delivered to this Department. Investigation of these animals by Dr. Jungherr, Pathologist of the Connecticut State College, disclosed the fact that the dead squirrels were afflicted with an infectious skin disease known as *Papillomas*. A shortage of acorns in 1933 probably induced the migration but it is possible that if the food shortage and the migration had not occurred, this disease might have spread to reduce the number of squirrels.

The migration phenomena is reported in detail by George C. Goodwin in "Nature Magazine" for May, 1934. However, no one has offered a satisfactory explanation of the factors which prompted a large number of squirrels over an area of twenty-five to thirty miles wide to start a definite migration all at the same time in the same direction disregarding all normal obstacles.

Whatever the causes, the phenomena illustrates the impelling forces of nature at work maintaining a check on the undue increase of any species so as to retain a balance between that species and its food supply.

Another balancing force or selective impulse in nature provided for the retention of a few squirrels quite equally distributed throughout the state.

These were doubtless the strongest, finest animals and constitute the foundation breeding stock for future generations. Thus the constant improvement of the species is accomplished through the survival of the fittest. In a few years squirrels will become abundant again and by the process of evolution they will be better adapted to the natural conditions which obtain at this time than were the squirrels of the previous generation.

#### Deer

Few people realize that probably there are more deer per acre in this state than in any other New England State except Rhode Island where the conditions and laws are similar to those in Connecticut. The physical condition and size of the deer in Connecticut are excellent, indicating that a good balance between the number of deer and their food supply is being maintained.

The population of deer is kept in reasonable control by the fact that under certain conditions property owners are permitted by law to shoot deer on their own property if damage to cultivated crops has been caused within thirty days.

It appears that there are still many property owners who are not familiar with the provisions of this law or with the policy of the State Board of Fisheries and Game which encourages property owners to shoot deer on their property where damage has been caused, by issuing rifle permits for that purpose.

In each case the deer shot and reported according to law becomes the property of the owner of the land although it cannot be sold. There is no authority or desire on the part of the Board or of its wardens to confiscate any deer shot legally according to the provisions of Section 3134.

The requirement that the killing of such deer must be reported to the Board within twelve hours is important for the purpose of recording the legality of the killing and the possession of the deer. Under this arrangement it is generally understood that the farmers use for food the deer which are protected at the expense of the sportsmen and in return permit sportsmen to use their property for hunting ruffed grouse and other small game of little food value.

This arrangement appears to be satisfactory to all who are properly concerned in the matter. Serious damage to crops is reported only in a few localities usually where the property owners either do not realize that they are permitted to shoot deer or are averse to deer shooting and like to see deer on their property. There is no law, however, which provides for the payment of damages to crops or to property.

#### Unusual Mammals

Opossums were introduced from the south and liberated in New Haven and Fairfield Counties by a few sportsmen several years ago. These interesting mammals (Marsupials), which carry their young in a pouch like the kangaroo, are increasing and extending their range northward although they are not protected by law. It is unlikely that they will become sufficiently abundant to cause any material damage to wildlife or to crops.

Few people realize that an occasional moose inhabits Connecticut. These animals come from a small herd which escaped from the Whitney preserve on October Mountain a number of years ago. A small herd still survives in an almost impenetrable swamp area in southwestern Massachusetts. There will never be many moose in Connecticut but there is interest in the thought that even a few may be found in our outdoor museum of wild specimens and protection should be provided for them.

A few black bear wandered into Connecticut from eastern New York and southwestern Massachusetts during the spring and summer of 1934. The nursery traditions about the dangerous killing habits of bears in general have no foundation in fact, particularly as applied to the black bear which is a most interesting and thoroughly harmless animal. It is an unfortunate reflection on our intelligence and attitude toward many living things to record the fact that as soon as a single bear was reported in Connecticut a few men proceeded at once to hunt and to kill, if possible, the first and only specimen which has been reported here for many years. Black bear will never become numerous in Connecticut and the few specimens which remain here should be given the complete protection which our laws do not now afford.

A few porcupines are occasionally seen in Connecticut. These interesting animals will never be sufficiently abundant to cause any material damage and should be protected.

#### Foxes

The classification of the fox is difficult because the two species must be considered together although the red fox is a superb game animal, a valuable fur bearer, but under some conditions also a predator.

The red fox, however, should not be classified as a predator so long as its numbers are kept within reasonable bounds by fox hunting. The food of the red fox usually consists of harmful rodents during the winter months, but during the spring and summer its food habits are less commendable. Under normal conditions, the red fox can be kept in reasonable control by hunting and trapping. At the present time, however, both the red and the gray fox are increasing rapidly throughout the state, particularly in Fairfield County where they are proving very destructive.

The gray fox is inferior to the red fox as a game animal and fur bearer and much more destructive of game at all seasons. It is extending its range northward and increasing rapidly. It is probable that if the gray fox could be eliminated, the red fox in its present abundance would not be out of balance or dangerously destructive. Unfortunately the methods of control which apply to one also apply to the other.

It is commonly believed that some of the hunt clubs are largely responsible for the increase of foxes, particularly in Fairfield County, by the importation and liberation of gray foxes as well as red foxes. It is difficult to believe that drastic laws and their strict enforcement may be necessary to put an end to this reprehensible, unscrupulous and wholly illegal practice.

### Predators

The domestic cat which has been abandoned or is allowed to roam at will, especially at night and at all seasons of the year, takes a tremendous toll of wildlife, including rabbits as well as game, song and insectivorous birds.

The majority of hawks and owls are more beneficial in controlling rodents than they are harmful to game. Most of them will take an occasional bird or even a rabbit but the total loss from this source is insignificant except in the vicinity of game farms or other concentrations of game.

The great horned owl, the cooper's hawk, the sharp-shinned hawk and the goshawk are considered harmful predators in Connecticut. The great horned owl is particularly numerous and destructive, although rarely seen because it is active only at night and its numbers should be substantially decreased.

During the winter months there is a great concentration of crows in Connecticut. This situation was investigated by Mr. Robert P. Allen, Field Agent of the National Association of Audubon Societies, during the winter of 1932-1933, at which time five winter roosts were definitely recorded having a total estimated population of seventy thousand crows. A single roost in Hartford County, close to the City of Hartford, which is probably the oldest crow roost in the state, having existed for more than fifty years, had an estimated population of no less than fifty thousand crows at that time.

It is now generally conceded that the crow is very destructive of the eggs of all birds and particularly destructive of the nests of waterfowl. No one who has seen the great concentration of crows in the Hartford County roost can reasonably deny that they are distinctly out of balance and that a substantial reduction in their numbers would be beneficial to agriculture and to the restoration of other more valuable and less numerous birds.

The control of these crows, many of which come from the northern states and Canada, will be helpful also to the conditions on the waterfowl breeding areas to the north.

Crow shooting in the vicinity of roosts has become a popular sport and although many crows are killed in the course of a season it is apparent that this method of control will not accomplish a sufficient reduction in the population. The Department is experimenting with traps and other methods.

The weasel is increasing in Connecticut and represents a serious menace to game, particularly rabbits. It can be taken easily in small traps and deadfalls. Since its fur now has some value, farmers' boys may be encouraged to trap and control this predator. The use of deadfalls, which do not require tending as frequently as steel traps, is particularly recommended in the trapping of weasels.

The bobcat is increasing rapidly in Connecticut and extending its range southward. In 1934 a bobcat was taken near Madison which was the first found in New Haven County in many years. They are now found in all counties of the state. Bobcats feed largely on deer and raccoons but also take a heavy toll of other smaller game, particularly rabbits.

### Fur Bearers

The value of the crop of fur bearers taken in Connecticut in 1932 is conservatively estimated at \$79,120. In that year, 1,199 licenses, including 149

permits to minors, were issued. This gives an average return of about \$66 per licensed trapper. A complete record of the fur bearers taken and their value is given in the appendix, page 98.

#### **Song and Insectivorous Birds**

The protection of song and insectivorous birds is an important part of the work of this Department although it is relatively inconspicuous and often escapes attention.

The efficiency of our warden service holds in check those who would snare or trap birds of all kinds if given the opportunity. The sanctuaries maintained and managed by the Department are valuable for song and insectivorous birds as well as for game. The grain and fruit-bearing shrubs planted by the Department offer food for birds of all kinds. The control of predators is helpful to small birds as well as to game.

There are still some who refuse to believe that the Department is sincerely interested in the conservation of all forms of wildlife, including song and insectivorous birds, each in a normal balance and relationship to each other. This interest and acknowledged responsibility is demonstrated by the fact that this Department suggested and sponsored the organization of The Connecticut Nature League to represent those who are interested in the conservation of all natural resources. The officers of the Nature League act in an unofficial advisory capacity to the Board. In this respect, the Nature League corresponds to the Advisory Council, whose membership is composed of two sportsmen from each of the eight counties of the state.

It is hoped that the Nature League will attract to its membership those who are willing to give their moral support to the activities of this Department in the rational conservation of our wildlife resources to the end that appropriations may be granted by the Legislature to permit the continuance of this work and the adoption of a broad, constructive educational program. Unless this is accomplished, it is doubtful if this Department can justify a continued use, for such purposes, of funds which are contributed by sportsmen through their license fees.

#### **Sportsmen's Conscience Fund**

A Conscience Fund has been established for the benefit of those sportsmen who, for any reason, may wish to make a contribution which will be used for the purchase and liberation of game. Checks should be made payable to the Game Restoration Fund and mailed to the State Board of Fisheries and Game.

#### **Wildlife Restoration Fund**

A Wildlife Restoration Fund has been established for the benefit of those who wish to make contributions for feeding birds in winter and similar activities in the interest of general wildlife restoration. Checks should be made payable to the Wildlife Restoration Fund and sent to the State Board of Fisheries and Game.

#### **Bequests**

The State Board of Fisheries and Game is authorized to accept gifts of land and funds and to administer such gifts in the interests of wildlife restoration.

## THE WATERFOWL RESTORATION PROGRAM

1932-1934

PHILIP BARNEY, *In Charge*

For the past eight years the state has been working gradually towards the establishment of a definite waterfowl program. The early steps consisted of experimental plantings of wild rice and other duck foods, the acquisition of lands suitable for feeding and nesting areas, such as the Shade Swamp Sanctuary at Farmington and the propagation of wild mallards and wood ducks at the Litchfield-Morris Wildlife Sanctuary at Bantam Lake.

The results of these early experiments have clearly demonstrated what could be accomplished in increasing the number of local waterfowl and in holding for a longer period the various species of flight ducks which furnish the Connecticut gunner the greater part of his sport. With these results in mind and in view of the increasing tide of "waterfowl consciousness" among sportsmen, the State Board instituted a comprehensive Waterfowl Restoration Program during the early summer of 1932 and set aside a small sum for its administration under the Division of Game Restoration.

The waterfowl program may be divided roughly into two parts. The first and most important of these is concerned with those species which frequent our inland ponds, streams and marshes among which is the black duck, the backbone of duck shooting in the State of Connecticut. Due to the habits of these species and the character of the physical environment in which they live they adapt themselves more readily to a management program than to one based on artificial propagation. A program for the improvement of conditions by natural methods also has the greatest "dollar efficiency." Consequently, it is on this part of the program that the largest amount of work has been done.

The second part of the program deals with species which, under normal conditions, live in salt water and in the coastal salt marshes. None of these species nest locally and their management at present is largely a problem of protection. There is one subspecies, the Red-leg black duck, which overlaps both divisions of the management plan but since this important duck requires fresh water for its existence its management falls under the plan for inland ducks.

Both large divisions of the Waterfowl Restoration Program may be subdivided into the following headings: (1) Protection, (2) Propagation, (3) Feeding, (4) Shooting, and (5) Trapping and Banding. The latter subdivision enters into all the other phases, but for clearness in the ensuing report it has been separately classified.

**Protection**(1) *Refuges.*

One of the major objectives of the waterfowl program is the establishment of feeding and resting areas. Unfortunately most of the existing areas of this type must be used in part also as shooting grounds. This results in such a concentration of hunters and of shooting that ducks are practically prohibited from using these areas during shooting hours. The policy will have to be continued until enough areas of sufficient size are secured to permit the



—Photo by Post Publishing Co.  
Black Ducks Near Mouth of the Housatonic River, Conn.,  
Winter of 1934.



Wild Rice at One of the Six Public Duck Shooting Grounds in Connecticut.  
Lord's Cove, Lyme, 1934.

establishment of inviolate refuges on small areas and on parts of large areas with a careful regulation of shooting practices and shooting hours which will permit the partial use of the entire area also for feeding and resting waterfowl. At present, refuges are maintained only on state parks, state institution grounds and similar areas where shooting is prohibited because of other conditions.

It is not the policy of the state at the present time to further increase the number of waterfowl refuges but rather to concentrate on improving natural conditions in those which have been established. The following table gives the names and locations of the more important waterfowl refuges and the approximate number of ducks which, under normal conditions, spend the fall and winter on these areas:

<i>Name</i>	<i>Location</i>	<i>Number and Species</i>
Bantam Lake and other ponds in vicinity	Litchfield	1,500 Blacks, Mallards, Wood Duck and Geese
Bride Lake State Farm for Women	East Lyme	8,000 Blacks, Mallards, Geese
Hampton Reservoir Part of Natchaug State Forest	Hampton	200-500 Blacks and Mallards
Milford Cove	Milford	500-2,000 Scaup, Blacks, Scoters and other sea ducks
Shade Swamp	Farmington	1,000 Blacks, Mallards and Wood Duck
Dry Reservoir and Beachdale Pond, part of Pachaug State Forest	Voluntown	500-1,500 Blacks and Mallards

In addition to the above large state waterfowl refuges there are thirty-nine smaller areas, mostly privately owned, where this Department has been given complete jurisdiction over their use and management as waterfowl sanctuaries. These are primarily for nesting and do not have a large concentration of waterfowl nor are they generally suitable as shooting ponds.

## (2) *Predator Control.*

Waterfowl have two major natural enemies both of which are common in the State of Connecticut. One of these, the common crow, is destructive to nests and eggs. In Canada it has been estimated that as high as sixty per cent of all waterfowl nests are destroyed by crows alone.

While Canada has a larger concentration of these birds during the summer than are found locally the numbers that remain in Connecticut are sufficient to cause severe damage to locally nesting ducks. During the winter a tremendous concentration of crows gather in the state. A judicious control of the crow population is most practical at this season and if a method could be devised, such control would contribute much to the protection of waterfowl nesting areas here and in the north.

Chief waterfowl enemy number two is the snapping turtle. From the time the young ducks are hatched until they reach the age of at least six weeks they are in constant danger of the marauding "snapper." Fortunately, an

efficient and economical method of control by trapping has been worked out for this predator.

The management program for all state refuges and waterfowl breeding ponds calls for a careful control of these two predators together with others of less importance to waterfowl.

### (3) *Law Enforcement.*

The laws protecting migratory waterfowl are primarily Federal laws. Under a basic code of the Federal government the state has its own laws and its own jurisdiction. The state wardens also serve as Deputy Federal Wardens, which enables them to present violators to the Federal courts for action.

A large share of responsibility for the need of such law enforcement and for enforcement itself rests in the hands of the waterfowl gunners. They should realize that they are deriving their sport from a migratory crop of game, which in fact is steadily diminishing and that the state cannot replace this crop by annual stocking as it does pheasants.

During the last two years there were sixty-seven convictions for violations of migratory waterfowl laws in this state. Oddly enough, the most frequent violation, shooting after sunset, is not nearly as harmful to the duck supply as it is to the gunners and to the shooting conditions in Connecticut. Shooting after sunset invariably has one of two results: Either the birds will fly into that particular area so late that the legitimate gunner will have little sport during legal hours of shooting or the birds will be completely driven off the area and will seek feeding grounds further south.

The next most frequent violation is shooting wood duck. The wavering flight and peculiar call of this protected species makes it easy to spot to all except the random shot whose motto is to "shoot everything that moves and identify it later." The shooting of wood duck under most circumstances classifies the gunner as a pot-hunter or a raw neophyte who is a menace to his shooting brothers. Since this state has expended a great deal of time and energy in restoring this most beautiful of ducks, it is short-sighted to further postpone the day of its complete restoration by spasmodic and illegal shooting.

### **Propagation**

The waterfowl program depends on artificial propagation only to provide breeding stock to be liberated in suitable breeding ponds. The method is expensive and, unless carefully handled, promptly results in heavy, domesticated birds of no value.

The work that has been successfully accomplished in the artificial propagation of mallard and wood ducks at the Litchfield-Morris Wildlife Sanctuary has been made possible by private funds contributed through the White Foundation.

Since 1924, a total of 1,864 wood duck and 4,150 mallards have been raised at this Sanctuary and liberated throughout the state. It is largely due to the interest and financial aid of the White Foundation and to the management of an important natural breeding area in New London County by Mr. C. D. Lanier and Mr. Horace Havemeyer that wood duck have become

reasonably abundant and that the mallard has become a nesting bird in Connecticut.

In the spring of 1933 a definite plan to increase the local supply of nesting mallards and black ducks was adopted. Since this was in the nature of an experiment it was tried on a small scale the first season. Eight ponds or marsh areas, either State-owned or subject to State control, were carefully selected for their natural food supply, cover and comparative freedom from predators.

The birds with which these ponds were stocked were wild black ducks and mallard ducks trapped under Federal permit at Bride Lake Sanctuary in East Lyme. Before being liberated a few flight feathers were clipped to restrain their flight so that the birds would remain on the chosen areas. (Artificial feeding was kept up on the areas until the natural food supply had become well started.) The stocking took place during the end of March and early April. An intensive campaign against predators was maintained until the young birds were fully grown.

The results of this first year's experiment were sufficiently satisfactory to warrant a continuance and extension of the work in 1934. Thirty-nine additional ponds, mostly privately owned, were selected as suitable for development as nesting areas and were stocked with birds in the spring of 1934. The visible results were more than double those of 1933 and showed conclusively that the program may be successful under this system of propagation management.

The forty-seven waterfowl sanctuary breeding ponds are well distributed throughout the state as follows: Hartford County, 5; New Haven County, 2; New London County, 12; Fairfield County, 8; Windham County, 6; Litchfield County, 6; Middlesex County, 9; Tolland County, 7. A total of 559 black ducks and 305 mallards have been liberated in these ponds as breeding stock.

### Feeding

The program for the feeding of waterfowl falls naturally into two parts: first the restoration and increase of natural food and secondly the feeding of grains in refuges and other places when critical weather conditions make this necessary.

A survey by Mr. Francis Uhler of the U. S. Bureau of Biological Survey, covering most of the important waterfowl areas of the state in 1932, listed the food plants then on the areas and suggested methods of improving the conditions. In his report Mr. Uhler speaks highly of the stands of native wild rice (commonly called wild oats in Connecticut) particularly at Cromwell Meadows, Lord's Cove and other spots along the Connecticut River. Other important duck foods including wild celery were observed in abundance and in good condition in certain areas. The principal feeding grounds, however, are limited and concentrated.

The problem of increasing the natural food supply has proven far more difficult than is commonly supposed. Approximately eight hundred pounds of wild rice seed, some native seed and some from Wisconsin stock, and three thousand tubers of sago pond weed have been planted during the past three years with only mediocre success. The problem has boiled down to

Careful experimental work on small areas rather than a widespread sowing. This approach has already yielded results.

It has been found that transplantation of wild rice plants from our native beds has resulted in a "catch" where seed has failed; it has also been found that in general the transplanting of other food plants such as coontail and duckweed will furnish a faster maturing food crop under most conditions than the better known wild rice and celery.

Along with this phase of food planting goes the equally important phase of weed eradication and control. It is only by getting rid of aquatic plants which have no food value, or at least keeping them down to a harmless minimum, that many of our ponds can be converted into suitable feeding areas. Experimental work of this kind is being tried on yellow pond lilies at a small breeding pond near Bantam Lake. Several methods are being employed there but the results will not be apparent until the next growing season. To find a practical method of controlling such prolific weeds as yellow water lilies and cat tails would be an important contribution to the solution of the problem of increasing waterfowl food plants.

In the salt marshes along the coast the problem of increasing the natural food supply is even more difficult. In the fall of 1932 the stomachs and gullets of fifteen black ducks taken at Nells Island and Great Island were sent to the Biological Survey for analysis of their food content. These areas were chosen as typical salt marsh areas where little natural food apparently existed and yet where there was a concentration of black duck. The results of the analysis showed that the birds had been feeding partly on plants which can grow in this environment and which had not been recognized previously as of great importance. One of these is well known, the salt-marsh bulrush (*Scirpus robustus*), the other not so well-known, salt-marsh water-hemp (*Acnida cannabina*).

Eel-grass, as it is commonly known, is one of the most important salt water food plants but this species has been almost completely wiped out in recent years, probably by a disease which is not well understood. The problem is being studied by the Bureau of Biological Survey and others.

The feeding of grain to waterfowl during the early spring on nesting ponds and during the winter on refuges requires approximately ten tons of corn a year. During the severe freeze-up in February, 1934, it was due in large part to the generous contributions of loads of stale bread and other food stuffs by private concerns, organizations and individuals that a raft of about forty thousand black duck and broad-bill (scaup) at the mouth of the Housatonic River came through the emergency with practically no loss.

### Shooting

This Department now owns or leases six waterfowl shooting areas located at Farmington, Cromwell, Old Lyme, North Haven, Madison and Lyme. The public duck shooting areas will have to be managed differently than the upland game shooting areas since too many gunners on any duck shooting area spoil the sport for all. In order to make these areas worth while the number of guns permitted at any one time will have to be limited and all shooting will have to be done from blinds properly located at suitable dis-

tances apart. An experiment in such regulation of duck shooting will be conducted at Hammonasset State Park during the fall of 1934.

An important consideration in the management of waterfowl shooting areas, in addition to law enforcement and regulation practices, is to maintain a natural food supply and a sufficient water surface to attract birds. The extensive drainage of our coastal marshes by ditches to control mosquitoes has been the cause of great concern. In many cases this partial drainage has changed the character of the entire marsh area and has seriously affected, if not destroyed, the vegetation in pot-holes and sloughs which formerly supplied suitable breeding, resting and feeding areas for waterfowl and shore birds.

The absence of waterfowl and shore birds from the drained areas which they formerly occupied may be only the first indication of more serious consequences to come. The tragic results of unwise drainage and irrigation in the west should serve to warn us of the danger of creating such fundamental disturbances of natural conditions as changing a salt water marsh into a barren area of semi-dry land.

The mosquito control program has been very popular with relief agencies because the digging of new ditches and keeping last year's ditches clean offers continuous employment with a minimum of supervision. If the program is continued indiscriminately it bids fair to destroy the greater part of our marsh water areas which are important to waterfowl and to the sport of hunting.

Conferences have been held between officials of this Department and of the Mosquito Control Program in an effort to effect a compromise which will serve both interests. A system of removable dykes to be placed in the drainage ditches at the close of the mosquito breeding season and removed when warm weather comes again in the spring might be of some benefit in providing water holes for resting ducks but would not restore the food supply, which is more important. Zoning might be a practical solution although our present laws, which should be altered, give unlimited authority to the work of mosquito control with no regard for other interests.\*

The condition of Great Island at the mouth of the Connecticut River clearly shows the effects of drainage for mosquito control. This area formerly attracted large numbers of shore birds and many ducks nested near the fresh water pot-holes. Since drainage, shore birds are no longer found there in any number and ducks are found at the Island only in the fall.

An experiment was conducted at Great Island in 1932 in the use of dynamite in the construction of ponds which would be deep enough to support natural vegetation of value to ducks but in which the water would be freshened during flood periods and at high tides. It was thought that the frequent freshening of the water with drainage of the surface water as the floods or tides recede might serve to control mosquitoes without interfering with other interests. The use of dynamite was effective in blowing out the ponds but the small size of the ponds in relation to the cost and other considerations makes this method impractical on a large scale in this area.

\*Since this report was written a cooperative agreement has been reached between the officials in charge of mosquito control and this Department permitting the installation of flood gates in important waterfowl areas particularly at Great Island.

### Trapping and Banding

Trapping and banding work was carried on at the Bride Lake Sanctuary during the spring of 1933 and 1934. The purpose was first to secure birds for stocking purposes on the nesting ponds and secondly to secure information regarding the flight habits of black duck both outside and within the state. The birds taken for stocking purposes were mostly the native black ducks (*Anas rubripes*). A large number of Red-leg black ducks (*Anas rubripes*, subspecies *rubripes*) were banded and released which accounts for the variance between the number of black duck stocked and the number banded. The Red-leg black duck, nesting as it does in eastern Canada, is not suitable as propagating stock in this state.

The following figures on the results of banding are for the year 1933 since this is the only year for which the records are complete. The experience of the U. S. Biological Survey which issues the bands shows that seldom are more than sixty per cent of the bands returned from the banded birds which are shot. There seems to be a feeling that the killing of banded birds is a felony and the band is hastily thrown away or forgotten. This lack of full cooperation is unfortunate since the purpose of the banding is to supply reliable information which will be of practical value in planning intelligent restoration measures to increase the supply of ducks and to improve the shooting.

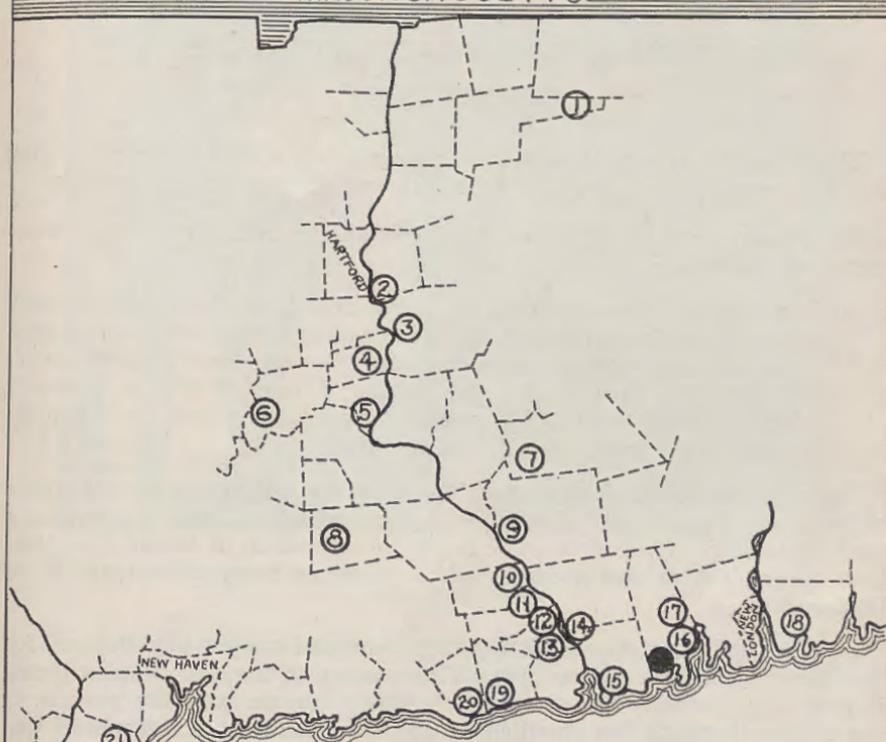
The total number of ducks banded in 1933 was 1,302, from which 164 (12½%) bands were returned, of which 124 or 75% came from birds shot in Connecticut. Bands returned from 38 birds (25% of the bands returned) shot outside of Connecticut show the following distribution: Ontario, 1; Quebec, 3; Nova Scotia, 1; Maine, 1; Vermont, 1; Massachusetts, 2; New York and Long Island, 8; New Jersey, 11; Delaware, 1; Maryland, 4; No. Carolina, 1; So. Carolina, 1; Virginia, 3.

The accompanying map shows the location of the twenty-one towns in the state where banded birds from the Bride Lake Sanctuary were killed with the number for each town.

It is estimated conservatively that eight thousand ducks use the sanctuary at Bride Lake during the fall months. Our banding records show that at least 12½% of these birds or one thousand in actual numbers would be killed. Again our records show that seven hundred and fifty or 75% of the birds shot would be taken in Connecticut, a reasonable supply of sport from one such area. It should be clearly understood, however, that these figures are based on actual returns on banded birds with no allowance for the number of bands which were taken but not returned, which would probably be about 40%.

These figures show conclusively that such sanctuary areas, and Bride Lake in particular, are of great value in holding birds in the vicinity during the shooting season. Without such safe resting and feeding areas all the birds would quickly leave after a few days of shooting. If the sportsmen would better observe the closed period laws and by spreading out would avoid a concentration of guns with too heavy shooting on any area, they would contribute much to the further improvement of duck shooting in Connecticut.

MASSACHUSETTS



**LOCATIONS IN CONNECTICUT  
WHERE BLACK DUCKS BANDED IN 1933 WERE KILLED**

164 DUCKS OR 12½% OF THE 1302 BIRDS BANDED IN 1933 WERE REPORTED KILLED, COVERING A RANGE FROM HUDSON BAY TO SOUTH CAROLINA. 124 OR 75% OF THE TOTAL REPORTED KILLED WERE TAKEN IN CONNECTICUT. CONSERVATIVE ESTIMATES PLACE THE NUMBER OF BLACK DUCKS ON BRIDE LAKE AT 8000 DURING THE SHOOTING SEASON OF 1933 THEREFOR IT IS REASONABLE TO BELIEVE THAT THIS SANCTUARY SUPPLIED AT LEAST 1000 BLACK DUCKS TO THE SPORTSMAN'S BAG. THE MAP AND TABLE SHOW THE LOCATIONS AND THE NUMBER OF BANDED BLACK DUCKS THAT WERE REPORTED KILLED IN CONNECTICUT, SEASON OF 1933.

**BRIDE LAKE - WHERE DUCKS WERE BANDED**

LOCATION	NO. BANDS RETURNED	LOCATION	NO. BANDS RETURNED
1 CRYSTAL LAKE	3	12 SAYBROOK	36
2 KEENEY COVE	3	13 ESSEX	21
3 GLASTONBURY	1	14 LORDS COVE	7
4 ROCKY HILL	1	15 GREAT ISLAND	9
5 CROMWELL	3	16 NIANTIC	14
6 KENSINGTON	1	17 EAST LYME	4
7 WESTCHESTER	1	18 GROTON	1
8 DURHAM	1	19 WESTBROOK	1
9 EAST HADDAM	12	20 CLINTON	1
10 CHESTER	2	21 MILFORD	1
11 DEEP RIVER	1	<b>TOTAL</b>	<b>124</b>

## THE PROBLEMS OF WILDLIFE RESTORATION IN CONNECTICUT

The ultimate purpose of wildlife conservation is directly concerned also with the conservation of human life, health and the pursuit of happiness.

The Honorable P. B. O'Sullivan, Judge of the Superior Court, has volunteered the following:

"It has been my observation in the criminal side of the Superior Court that the children presented for infractions of the law were of the type who never had been given an opportunity to become interested in outdoor sports such as fishing and hunting. I have felt that activities in these intensely interesting pastimes would have been an antitoxin against crime to the children in question."

The principles of good sportsmanship which are encouraged by the sports of hunting and fishing are identical with the principles of good business and good citizenship. There is no more healthful occupation of leisure time than hunting and fishing and no sport which offers as many advantages at so little cost.

In a normal year approximately fifty thousand people buy licenses for hunting or fishing in Connecticut. The number of hunting licenses issued is now about equal to the number of fishing licenses and the average is twenty-one thousand five hundred of each. In addition, six thousand five hundred indicate an active interest in both sports by securing a combination license. Since hunting and fishing are seasonal sports which do not overlap to any extent, the number twenty-eight thousand may be taken as the average number of licensed sportsmen who constitute an annual drain on both fish and game by hunting and fishing during the respective seasons for each.

It is probable that another fifty thousand people take some active part and interest in either hunting or fishing. This includes property owners who are not required to have licenses to hunt or fish on their own land and children under sixteen years of age, many of whom enjoy hunting and fishing. These, however, are not persistent followers of either sport and probably constitute a drain on fish and game resources equivalent to about two thousand licensed hunters and anglers. Therefore, we estimate that thirty thousand represents the average number of people whose combined catch of fish and game in their respective seasons constitutes the total annual drain on these resources. Actually a much larger number, at least one hundred thousand people, derive some direct benefit from these sports since the majority of those who enjoy fishing are not the same ones who enjoy hunting.

When facilities for parking and picnicking are provided in the vicinity of fishing streams or hunting grounds, a still larger number of people are benefited indirectly by the sports. The most popular State Forests are those which border fishing streams or ponds. Likewise the most popular streams and hunting grounds are those near which picnic areas and other accommo-



**An Unspoiled Roadside Bordering the Farmington River,  
Peoples State Forest.**

The State Forest Policy in Connecticut, which also directs the work of the Civilian Conservation Corps, carefully avoids clearing underbrush, which destroys game cover as well as scenic beauty, except in limited areas which are developed for picnic grounds or similar recreational uses.



**Camp Site on Peoples State Forest Bordering the Farmington  
River.**

Well stocked streams, ponds and hunting covers offer the incentive to spend the day in the open. Other members of the family are also benefited.

dations have been furnished either by this Department or by the State Forest, Parks or Highway Departments.

The area which now constitutes the State of Connecticut once supported a population of about thirty thousand Indians,\* who depended for their food supply almost entirely on the wildlife resources of this area. That food supply was supplemented by a relatively small proportion of grain, with some wild herbs and food-bearing shrubs.

Today we find it difficult to maintain a supply of fish and game sufficient to sustain only the recreational interests of about thirty thousand people in the sports of fishing and hunting during relatively short seasons with no consideration of either fish or game as a source of food supply.

### The Original Balance of Nature

Formerly this area was mostly covered with a mixed forest of deciduous hardwoods and evergreen softwoods which furnished both food and shelter for woodland game. The forested hillsides also conserved an abundant rainfall which later seeped out as cold springs, maintaining an even flow of water throughout each year to feed the natural ponds and rivers of the region. Excessive floods, erosion and low water conditions did not occur.

As mature trees in the forest passed into decay, they furnished dens for raccoon and nesting sites for wood duck. When they finally fell to the ground, they left openings in the forest where grouse found suitable conditions for nesting and rearing their young. Exposed to the sun, these open areas encouraged the growth of fruit-bearing vines and shrubs, which furnished food for wildlife in fall and winter. This growth was followed by birch which furnished buds for grouse in winter and necessary shade for other trees of slower growth which, in turn, furnished browse for deer and rabbits.

In short, the forces of nature were constantly working to maintain a nicely adjusted but constantly fluctuating balance, not only in the relationships between the vegetable and animal kingdoms, but between species of both kingdoms. Even the mineral kingdom played an essential part in maintaining this balance, since the leaves from the trees and other vegetation served to maintain soil fertility. The decaying vegetation also formed a humus, which acted like a sponge in conserving rainfall and in further decay formed other chemical and mineral elements necessary for the continued growth of vegetation.

Under these conditions there was an abundant supply of fish and game. The population of thirty thousand Indians was, in fact, a part of that balance, since their numbers were certainly limited by the normal annual food supply. The Indians were conservative in taking only that which they could use for food or clothing.

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\*Based on comparison of estimates by two authorities on Indian History of Connecticut. DeForest, "History of Connecticut Indians." Trumbull, "History of Connecticut," Vol. 1.

### The Change of Environments

In the space of only three hundred years the natural conditions have been completely changed. The balance has been upset and overturned many times in many directions.

When our forests were cut, all woodland game suffered. Native deer disappeared. Forest fires and the exposure of soil destroyed the humus which had accumulated over countless centuries. Rainfall was no longer conserved, but ran off quickly on the surface, causing erosion. Quickly melting snows contributed to spring freshets, causing other erosion and pollution of the streams with silt. The loss of soil fertility affected the character and growth of trees and other land crops which, in turn, affected the game supply. Silted streams destroyed the food supply for fish. Industrial pollution and the construction of dams which prevented the passage of fish to their spawning grounds followed to complete the destruction.

Thus through the profligate waste of natural resources, and by misuse of land, the basic resource, have we destroyed the natural balance and completely disregarded the supreme force of nature.

Until recently, we have attempted to correct the effects of our destruction of fundamental natural conditions by such superficial methods as passing laws to regulate the behavior of man in hunting and fishing, the least important factor in creating the situation. During all this time we have given little, if any, attention to the regulation of the behavior of man in such highly destructive and unnecessary practices as the pollution of streams and the construction of dams which fail to provide for the passage of fishes to their spawning grounds, and which often divert water, or hold it back, in a manner which leaves the stream beds dry and barren.

### The Case of the Salmon and Shad

The history of the salmon in the Connecticut River will illustrate the point for all the species.

In the early days salmon were so abundant in the Connecticut River that it was not uncommon for apprentices to require, as part of their contract, that salmon would not be served at the table more than three times a week.

The construction of the first impassable dam at Holyoke, Massachusetts, in 1849 marked the beginning of a definite, inevitable end of salmon in the Connecticut River. Unable to reach their spawning grounds, the species declined rapidly and disappeared. Other dams, together with pollution and erosion caused by deforested watersheds, make restoration improbable except at great expense over a considerable period of time.

No amount of fishing, however, could have accomplished the extermination of salmon in this river as quickly or as surely as did the construction of even one impassable dam.

In a similar manner, the great shad fishery of the Connecticut River, to which this state still points with pride, would have been completely destroyed, even within the past decade, had it not been for the establishment of a shad

hatchery on the Salmon River. Every last spawning ground of the Connecticut River shad has been completely closed to these fishes by the construction of impassable dams with no consideration for this valuable natural resource.

The pollution of the Connecticut River and many of its tributaries has been sufficient to accomplish the same result, even if the dams had not been built. Our shad hatchery on the Farmington River was abandoned after it had been proven conclusively that the pollution of that water had become so great that the hatching of shad eggs or the growth of fry was impossible.

#### **Recognition of Fundamental Facts**

We cannot reasonably demand the immediate cessation of all pollution which a passive indulgence has allowed to become established gradually over a period of many years. Neither can we expect all dams to be rebuilt at once and provided with fishways.

We should, however, clearly recognize the fundamental causes of our wildlife situation and devote our attentions to a correction of them just as rapidly as reasonable policies will permit. We should carefully avoid being misled in our conception of the problem by placing responsibility for the situation on factors of little importance or being misled in our efforts to correct the situation by placing too great dependence on a restriction of superficial causes however conspicuous they may appear at this time.

The great loss which we have suffered directly and indirectly through the decline of our natural resources has been caused primarily by the sawyer and the engineer, followed by forest fires, erosion and pollution,—not by the sportsmen. Hunting and fishing have become important factors in the conservation of wildlife only because most species have reached the point in their decline where such restrictions of a relatively unimportant factor are necessary to avoid prompt extermination.

Nor can these species be restored and hunting or fishing maintained by depending entirely on such artificial and expensive methods as the propagation of fish or game to be liberated today and killed tomorrow. Unless the environment required by any species is available, no amount of restocking or of laws for its protection will ever accomplish its permanent restoration.

Wildlife, therefore, must be considered a product of the land, dependent on other crops of the land, for the food, shelter and other factors of environment which it requires for its existence and for its reproduction.

#### **The Need for Coordinated Land Use Program**

There is land and water enough in Connecticut to support fish and game in abundance to meet all the recreational requirements of our entire population. It remains only to use and manage that land so as to provide the conditions necessary for wildlife to survive and reproduce. This can be accomplished with little effort or cost in comparison to the value and with no interference with other proper uses of the land if a coordinated program of land utilization can be understood and undertaken by the cooperation of all related interests.

It is estimated that there are 870,000 acres of idle unproductive land in Connecticut. That area, representing 27½% of the total area of the state, if placed under management for forest and wildlife, could furnish useful permanent employment and residence to several thousand people who are now dependent upon relief. The incidental crops which they could raise for their subsistence would furnish some cultivation of the better soils in the area.

The crop of wildlife would at once respond to such management and use of this land and would furnish recreational opportunities for a large number of people.

The forest crop under management for this combined purpose would further restore the natural environment required by woodland game and improve the recreational opportunities of the area as well as the economic situation in the state.

The advantages to our recreational and relief problems, not to mention the food value of the increase in wildlife resources on the area, would justify the expense involved. Under the present State Forest management practices, it has been demonstrated that the actual cash revenue derived from the development of the forest area alone by improvement cuttings during the first ten years would pay all the interest charges on the investment for the purchase and management of the forest land. Prof. H. H. Chapman estimates that revenue from forest products would also repay the original investment in twenty years.

This is an important factor in our consideration of wildlife restoration in view of the fact that 56% of the rural lands in Connecticut are classed as woodlands, suitable only for woodland game. The ability of the forest crop alone to repay the cost of such land acquisition, with the annual crop of wildlife and the recreational opportunities a clear gain, would seem to justify a bond issue in order to acquire at once all the lands needed as State Forests to meet present and future needs. This would provide for the utilization of much of the area which is now idle and unproductive, and would also provide opportunities for establishing additional CCC camps and for the most useful employment of those who need relief.

#### **The Connecticut Forest Homes Plan**

This situation and the opportunities which it affords to provide a large number of stranded individuals with permanent self-supporting employment in a new, non-competitive field is the basis of the Connecticut Forest Homes Plan, which was originally sponsored by this department during the fall of 1933 and later developed in detail by the cooperative efforts of several state departments.

Although that plan was approved by authorities at Washington and the sum of \$100,000 was allocated for it by the Subsistence Homestead Division, the plan has not been undertaken because of certain details in the federal requirements for housing and other essentials which could not be satisfied under Connecticut conditions without seriously jeopardizing the success of the venture. The principle involved, however, is thoroughly sound and its eventual adoption under federal or state auspices or both is inevitable.

Although such development of the idle, unproductive land in Connecticut is justified from an economic standpoint, neither the long term forest crop nor the annual wildlife crop from that area would be sufficient to meet the requirements of our population.

The very nature of the sports of hunting and fishing require large areas. Sportsmen prefer solitude. Wildlife cannot be confined to limited areas. The maximum concentration which can be hoped for under the best of management is one head of wild game per acre.

Our program of wildlife restoration, therefore, must include a consideration of the entire area of the state, with particular reference to rural lands which alone offer suitable conditions for fish and game and opportunities for fishing and hunting.

Because of the range required by wildlife and because it is dependent on other land crops for its food and shelter, it cannot be considered a major crop of the land. The fact that it is a by-product of other crops, although in many cases more valuable as an annual crop than the major long term crops on which it depends, is all the more reason why it should receive attention in the management of any land. A policy or program of rural land use for agricultural or forestry purposes which fails to consider wildlife as a companion crop is incomplete and inefficient.

#### **Progress Based on Cooperation**

We are extremely fortunate in this state in having a well established policy of State Forest management which considers the conservation and restoration of wildlife as an integral and important part of that land use program. The management of our State Forests represents an ideal management of woodland area for wildlife which is attracting local and national attention. No similar situation exists in any other state. This has been accomplished by a voluntary spirit of cooperation between the two departments in an effort to coordinate these closely related interests in a manner which will serve both with a minimum of interference with either.

The complete restoration of wildlife can be accomplished only by the adoption of similar cooperative policies by the several state departments whose interests are related in any way and through the cooperation of private industries and individuals. Of the greatest importance is the cooperation of rural property owners in the use and management of their land in the interests of wildlife restoration.

It is the policy of this department, therefore, to extend every possible cooperation to other state departments and other organizations and individuals having related interests. A coordination of those interests can be accomplished to the benefit of all with no serious interference with any special interest when the problem and purpose is clearly understood.

To illustrate that point and the importance of a coordination of activities, particularly between state departments, we offer the following acknowledgments of valuable co-operation which we have received during the biennium:



— Photo by P. D. Dalke.

**Food-Bearing Shrubs and Strips of Grain Are Planted in Open Spaces at the Edge of Woods on the State Forests and Parks. A Trial Planting of Sunflower and Flax at the Natchaug State Forest, 1934.**



— Photo by P. D. Dalke.

**Extensive Areas of Hardwoods Will Be Improved for Game by Open Strips or Edges and by Small Plantations of Conifers for Winter Cover. This Practice Is Being Carried Out in Our State Forests as Rapidly as Possible. A Clear Cutting Preparatory to Planting With Pine, Leaving Open Strips One Hundred Feet Wide at Edges.**

## ACKNOWLEDGMENTS

### State Forestry Department.

The management of our state forests has always given consideration to the importance of wildlife as a companion crop. For the past ten years apple trees have been left on our state forests in Connecticut to furnish food for ruffed grouse. For the past five years it has been the practice of the State Forester, in making improvement cuttings or in planting new areas, to leave trees or seedlings of trees which are valuable as food for game such as white oak, birch, black locust, hickory and butternut. During the past two years, the Forestry Department has planted 21,430 white ash, 2,175 chestnut, 5,178 black locust, 2,770 black walnut.

The state forest management policy calls for the establishment of mixed forests by alternating strips of conifers with strips of hardwoods instead of large pure stands of either. This provides the combination of food and cover required by wildlife. Strips of open land are left around the edges of plantations and so far as possible large areas are divided into blocks of approximately ten acres by leaving open strips one hundred feet wide. These open areas and edges furnish the environment required by woodland game, particularly ruffed grouse, and will accomplish a substantial natural increase of all woodland species. In short, the state forests of Connecticut serve as practical demonstrations of the best known methods of forest-wildlife management. The efficient system of forest fire protection which has been established also represents a major contribution to the conservation of wildlife in this state.

### Civilian Conservation Corps.

Under the direction of State Forester Austin F. Hawes, the work of the Civilian Conservation Corps in Connecticut has been so planned and directed that none of the criticisms which have been voiced in many other areas have been heard in this state. There has been no clearing of underbrush, which destroys game cover, except in limited areas which were being developed for picnic grounds and similar recreational uses. The construction of thirty-five miles of truck trails, the cutting of four hundred and twenty-three miles of boundary lines and forty miles of fire lines and the clearing of eight hundred and seventeen acres, all creating open spaces and edges, has greatly improved the conditions for wildlife on the state forests. In fact, because of the state forest management policies mentioned above, all the work done by the CCC may be considered of value to wildlife interests.

In addition to the above, a nature trail has been built and marked by the CCC, at our Shade Swamp Sanctuary in Farmington. An attractive building of rustic design has been constructed there for the convenience of the visiting public. Nine ponds have been improved by building or repairing dams. Seven miles of stream have been improved for fishing by building one hundred and four deflectors, thirty stone barriers, fifty-seven artificial boulders, three boulder dams and eight shelters. The stream improvement work has been done on the West Branch of the Farmington River, Litchfield County; Roaring Brook and Burdicks Brook, Tolland County; Knowlton

Brook and Natchaug River, Windham County; Chatfield Hollow Brook, Middlesex County, and Mt. Misery Brook, New London County.

### **Civil Works and Emergency Relief Administration.**

Through the cooperation of the Civil Works Administration and later the Emergency Relief Administration of Connecticut, this department has been able to enlarge its facilities materially with a very small outlay of its own funds for material and equipment.

At times during the progress of the work one hundred and forty men were employed on the various projects. The total funds expended for payrolls by the CWA and FERA amounted to \$27,700 for a total of approximately fifty-two thousand man-hours of work. For material and equipment to carry on the work, the Board expended approximately two thousand dollars.

As a result of this work the department now has six new rearing ponds at the Kensington Hatchery each 100' x 200' in size. We have two additional ponds of the same size on Punch Brook at the Burlington Hatchery, two waterfowl rearing ponds at Farmington and a greatly improved water supply at the hatchery in Windsor Locks.

In addition we have been able to conduct an extensive statistical research into conditions for wildlife as well as hunting and fishing in the state which will be helpful in formulating future policies of the Board.

We are glad to report that the work was carried on with a degree of efficiency and economy which reflects great credit on the workers. This is clearly demonstrated by a comparison of the cost of the projects successfully completed with the cost of approximately twenty thousand dollars for four similar ponds constructed under contract at Punch Brook several years ago.

We are glad also to acknowledge the cooperation received from the relief officials in the towns where this work was carried on, particularly in assigning to our projects those who were fitted for that type of work.

### **State Parks.**

Many of the state parks are available as sanctuaries for wildlife and are being developed, in part, for that purpose. Seven state parks have been selected as being particularly valuable as sanctuaries for raccoons, and breeding stock has been liberated on those areas. Waterfowl shooting has been permitted under strict regulation on a portion of Hammonasset State Park.

### **Forest and Wild Life Commission.**

The purchase of lands and waters by this Commission has served the interests of wildlife restoration as well as of forests and other recreational interests. The Nepaug State Forest on the watershed of our Fish Hatchery at Burlington helps to maintain stream flow and to protect our investment there.

The Housatonic State Forest includes one of the most valuable game areas in the state. The Legion and People's Forests are a valuable safeguard against the loss of public rights to the full flowing waters of the West Branch

of the Farmington River. The Natchaug Forest protects the public interest in an important trout stream, the Natchaug River, and also includes an important waterfowl breeding pond. The Pachaug Forest is one of the best areas for woodland game and waterfowl and includes two excellent trout streams.

The Commission has recently established a new purchase area on the Salmon River at the request of this Department for the purpose of protecting the public interest in this last remaining unspoiled clear water river in the state.

### **State Water Commission.**

The activities of the State Water Commission are of the greatest importance to the recreational interests of the state.

Substantial progress in the new construction or the improvement of sewage disposal plants has been made by the following cities and towns: Danbury, Putnam, Canaan, Bridgeport, Wallingford, Hartford, Thompsonville, Tariffville, Ridgefield, Torrington, Stafford Springs and Meriden. These projects will improve conditions in the following important trout streams: The Quinnebaug, Blackberry, Quinnipiac, Norwalk and Willimantic Rivers.

The sewage disposal project of the Hartford Metropolitan District, which will cost approximately \$3,500,000 will greatly enhance the potential recreational values of the Connecticut River. Preliminary steps leading to sewage treatment have been taken by a number of other towns and boroughs including Naugatuck, Plainville, Thomaston, Winsted, Stratford, Milford, Norwich, West Haven and Kensington. No new sources of pollution have been established in our waters during the biennium.

The correction of industrial pollution, with particular reference to wastes from distilleries, dairies and the brass industry, continues as rapidly as possible considering present economic conditions, laws and funds available for the necessary research to determine practical methods of treatment which are not prohibitive in cost.

It is unfortunate that public opinion does not recognize or support the need for adequate funds to permit a more rapid correction of the pollution of our water resources.

The chemical analysis of water samples taken once a month from thirty of our principal streams, and the stream gauging program which have been carried on for the past six years by the State Water Commission, are of great practical importance to this Department.

The study of ground-water resources and the systematic survey of the principal water sheds of the state, primarily for the purpose of locating all major sources of pollution of public water, which has been undertaken recently by the State Water Commission with FERA funds, will be of great value to this Department when completed.

We acknowledge the cooperation of the State Water Commission also in investigating and acting on many complaints received at this office regarding pollution and illegal disposal of rubbish, particularly along the banks of streams.

### **Connecticut State College and Experiment Station.**

The establishment of wildlife courses as a definite part of the curriculum at the State College constitutes a recognition of the value of our wildlife resources, which has been extremely helpful in directing public attention to this subject. The cooperation of Professor A. E. Moss in directing these courses and in conducting a number of experiments and demonstrations of wildlife management on the property of the State College is gratefully acknowledged. We also acknowledge the cooperation of the Agricultural Experiment Station, particularly of Dr. E. E. Jungherr, Pathologist, in examining diseased specimens and conducting a study of wildlife diseases, with special reference to quail.

### **Mansfield State Training School and Hospital.**

This area, established as a sanctuary, has been intensively developed for pheasants in connection with experiments on the open range rearing method. The work is carried on mostly by patients under competent, sympathetic supervision. Predator control and other valuable assistance is rendered by one of the employees on his own time. Dr. Charles T. LaMoure and Superintendent John A. Hedman have rendered every possible cooperation in this work.

### **Connecticut State Prison Farm, Enfield.**

The cooperation of Warden Charles S. Reed is gratefully acknowledged in permitting the use of the farm at Enfield for conducting experiments in the restoration of pheasants by natural methods, in which the workers on the area are also taking an interest. Mr. Herman L. Borowskie, Supervisor of the Prison Farm, has rendered valuable assistance in modifying certain farm practices in the interest of wildlife restoration.

### **Connecticut State Hospital, Middletown.**

This area established as a sanctuary has also been used for conducting experiments in intensive quail restoration by an open range rearing method and by the establishment of certain management practices. The work was carried on and the rearing equipment built mostly by certain patients at the hospital. The cooperation of Dr. R. L. Leek and Mr. William Root is gratefully acknowledged.

### **The Connecticut State Farm for Women, Niantic.**

The cooperation of Miss Elizabeth Munger, Superintendent, is acknowledged in permitting the use of Bride Lake on this area for experiments in banding waterfowl and in trapping wild ducks to be liberated for breeding stock in other areas. Effective predator control is carried on by the employees and assistance is also rendered in feeding the several thousand wild ducks and some geese which make use of this sanctuary every year.

### **Department of Domestic Animals.**

Our contacts with the Department of Domestic Animals have to do mostly with the disturbances of game by self-hunting dogs. All such complaints

have been promptly investigated and every reasonable effort has been made to apprehend the offenders. These efforts have not been successful always, as anyone who has tried to catch a self-hunting dog will readily understand.

The cooperation of this Department and its agents in holding hunting dogs which come into its possession for a longer period than the five days required by law, and in trying to locate the owners, is hereby acknowledged on behalf of the sportsmen.

#### **State Department of Aeronautics and the 43rd Division Aviation C. N. G.**

The State Department of Aeronautics and the National Guard have rendered valuable cooperation in taking photographs, making game surveys and feeding birds, particularly waterfowl.

#### **State Board of Health.**

The cooperation of the State Board of Health in supporting a policy which does not permit the introduction of wild rabbits from areas infected with tularemia, which disease is often fatal to humans as well as to rabbits, is gratefully acknowledged.

#### **State Highway Department.**

The State Highway Department has cooperated in the improvement of the approach to the headquarters of our Shade Swamp Sanctuary, Farmington, and in establishing a picnic area in that vicinity for the convenience of the visiting public.

#### **Department of Agriculture.**

The Department of Agriculture has cooperated in recommending that certain farm and orchard practices or programs be modified so far as possible to serve the interests of wildlife restoration without seriously interfering with the principal interests of agriculture.

#### **U. S. Bureau of Fisheries.**

The United States Bureau of Fisheries, Washington, D. C., has rendered valuable cooperation in the collection of bass fry from Lake Wangum of which the share for distribution in Connecticut has been 270,000 in 1933 and 292,000 in 1934.

We have been able to avoid using domesticated strains of brown trout by securing approximately 280,000 eggs per year from the Bureau of Fisheries taken from wild brown trout in the Madison River, Montana.

#### **U. S. Bureau of Biological Survey.**

The cooperation of the Bureau of Biological Survey is acknowledged in giving assistance when requested in the enforcement of migratory bird laws and in supplying technical information on many subjects. A survey of certain waterfowl areas in Connecticut made by Mr. Francis Uhler in 1932 has been of great value in planning our waterfowl program.

### **State of Vermont.**

A cooperative arrangement has been made with the Fish and Game Department of the State of Vermont which assures an annual supply of pike perch eggs, starting with the year 1934 when we received twelve million eggs which were successfully hatched and liberated in Lake Candlewood. We gratefully acknowledge the cooperation of Commissioner James H. Brown in this matter.

### **Connecticut Forest and Parks Association.**

This organization embraces a membership whose interests cover a much broader field than the name of the Association indicates. Its incidental interest in the subject of wildlife restoration, particularly in its relation to the management and use of state forests and parks, has been extremely helpful. The broad interests of this Association were demonstrated by the employment of a Nature Guide at our Shade Swamp Sanctuary, Farmington, during part of the summer of 1934.

It is hoped that this Association may serve as an incentive to sportsmen to organize and support a similar organization to represent their state-wide interests and to actively cooperate with this Department in carrying on many activities which a private organization can accomplish more effectively than can a State Department.

### **Municipal Water Bureaus and Similar Organizations.**

An area of 70,158 acres of land and water owned by cities and towns and water companies for water supply and reservoir sites may also serve certain wildlife and recreational interests without interference with their primary purpose.

The Bristol and Torrington Water Companies have cooperated with this Department in permitting hunting on certain portions of their reservoir properties. Such hunting is subject to the strict regulation and patrol of the State Board of Fisheries and Game.

The city of Winsted has permitted fishing in Lake Winchester, subject to the strict regulation of this Department.

For several years the New Haven Water Company has permitted fishing in Lake Saltonstall subject to their own regulation and supervision. During the past year the company abandoned Branford Reservoir as a water supply and has permitted fishing there under our supervision.

The Bridgeport Hydraulic Company has continued to permit the use of Samp Mortar Reservoir for fishing under regulations by this Department.

The Water Bureau, Metropolitan District of Hartford, has permitted certain limited use of the extensive area under its control, mostly in the direction of predator control.

The town of Norfolk has permitted the use of Lake Wangum for securing bass fry.

Many other cities and towns have been helpful in permitting this Department to seine surplus fishes from their water supply reservoirs.

### Other Groups.

We also acknowledge the cooperation of the office of the Attorney General, the State Library, the State Police, The Connecticut Light and Power Company, The Connecticut Power Company, the New York, New Haven and Hartford Railroad Company and others.

### Sportsmen's Clubs.

The great majority of sportsmen's clubs have shown a commendable attitude of cooperation in accepting many new regulations and policies which have seemed advisable. The policy of having all fish and game liberated by the warden service instead of by sportsmen's clubs has been accepted in good spirit by the majority although unpopular in some quarters when first announced.

During the severe winter conditions of 1933-1934, many sportsmen's clubs purchased grain and other food for wildlife and organized their members into groups for its distribution.

The Izaak Walton League of New London has successfully reared about two thousand adult trout and eighty-eight thousand pond fishes per year in the rearing ponds which it has maintained in cooperation with this Department. All fishes reared by this group have been liberated in water open to public fishing. This organization also planted five thousand four-year-old trees on hunting lands and watersheds.

The Naugatuck Fish and Game Association established a trout rearing pond in 1933 in cooperation with this Department. On April 13, 1934, this club released in public waters 2,745 yearling brook trout which had been held over the winter.

Many sportsmen's clubs have purchased and liberated pheasants on areas which are open to public shooting. In such cases, the Department cooperates by paying fifty per cent of the cost, not to exceed one dollar per bird.

There is need for the state-wide organization of groups of sportsmen representing special interests. These might include a state-wide anglers' association, a Connecticut division of the Salt Water Anglers of America and associations of those interested in upland game, waterfowl, fox and coon hunting and trapping.

Such organizations would be extremely helpful to the Department in formulating state-wide policies and programs for the improvement of any sport, based on a reliable consensus of opinion expressed by those who are most interested in that particular sport. These organizations would supplement the local sportsmen's clubs which include all these interests but which are concerned mostly with local conditions.

These groups might be combined and their interests coordinated as divisions of a single state association which, if properly organized and officered, would find liberal support entirely from private contributions. It could then employ an executive field agent to represent the separate and combined interests and to maintain contacts with the members in local groups and with other organizations including the State Departments.

Until such an organization is built, the interests of the sportsmen as a whole are constantly endangered by the activities of small groups who seek to accomplish selfish purposes and who thus tend to undermine and to destroy the non-political foundation on which the present policies and programs are based.

### **Individuals.**

The cooperation of property owners on more than eighty thousand acres in permitting hunting on their lands subject to regulation by this Department, is hereby acknowledged.

The cooperation of many Boy Scout troops and similar groups of boys and girls in building and placing bird houses, constructing feeding shelters and in feeding birds during the winter months, is also gratefully acknowledged.

Four hundred and eighty individual sportsmen have volunteered their services as Game Guardians. The active cooperation of this group in reporting violations and in assisting our warden service in many constructive projects, is gratefully acknowledged.

We also acknowledge the cooperation of many grain companies, bakers and similar commercial organizations who contributed food for wildlife during the winter of 1933-1934, and the cooperation of thousands of individuals, having no connection with any organization or group, who assisted in the distribution of food for wildlife during that emergency.

### **Employees.**

The Commissioners join with the Superintendent and Division Chiefs in acknowledging with full appreciation the loyal and efficient services rendered by all the employees, without which cooperation the progress recorded above could not have been achieved.

**LEGISLATION RECOMMENDED  
BY THE  
STATE BOARD OF FISHERIES AND GAME**

**Appropriations.**

Administration .....	\$26,300 per annum
Acquisition of Land and Water.....	25,000 per annum
Commercial Fisheries (Marine) .....	10,000 per annum
Commercial Fisheries (Inland) .....	5,000 per annum
	\$66,300 per annum
Total revenue from licenses and other sources estimated at .....	\$182,000
Total appropriations requested .....	66,300
Balance in funds .....	23,700
Budgetary requirements .....	272,000
Percentage of appropriations requested to total budgetary requirements .....	24%

(See page 14)

**Major Legislation.**

- (1) To give the Board discretionary power with authority to regulate hunting, fishing and trapping according to existing conditions and needs.
- (2) To provide a penalty for the destruction of wildlife equal to its replacement value.
- (3) To give the Board authority to issue licenses in addition to the Town Clerks.

## FINANCIAL STATEMENT

July 1, 1932 — June 30, 1933

## Means of Financing

Balance in license funds, July 1, 1932.....	\$ 92,951.57
Receipts from sale of licenses and other sources.....	169,588.94
Appropriations.....	83,663.89
Total Resources.....	<u>\$346,204.40</u>

## Expenditures

<i>Administration Costs</i> .....	\$23,911.42
<i>Acquisition of Fishing and Hunting Rights</i> .....	29,545.63
<i>Protection and Propagation of Inland Fishes</i>	
Field Supervisor.....	4,317.15
Warden Service.....	41,813.67
Trout Restoration.....	38,573.40
Shad Restoration.....	2,981.27
Pond Fish Restoration.....	3,942.05
Purchase of Property.....	1,250.00
Printing of Licenses and Buttons.....	929.52
Professional Services and Scientific Work.....	154.00
Miscellaneous.....	1,522.26
	<u>\$95,483.32</u>

*Protection and Propagation of Marine Fishes*

Warden Service.....	2,854.52
Maintenance of Boat.....	480.84
Lobster Restoration.....	7,950.89
Flatfish Restoration.....	889.29
Smelt Restoration.....	709.74
Miscellaneous.....	835.60
	<u>\$13,720.88</u>

*Protection and Propagation of Game*

Warden Service.....	34,518.49
Purchase and Restoration of Game.....	47,999.15
Game Sanctuaries.....	6,689.49
Printing of Licenses and Buttons.....	1,042.31
Game Survey.....	19.80
Miscellaneous.....	1,389.04
	<u>\$91,658.28</u>

Total Expenditures.....	\$254,319.53
Balance.....	91,884.87

<u>\$346,204.40</u>	<u>\$346,204.40</u>
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## FINANCIAL STATEMENT

July 1, 1933 — June 30, 1934

**Means of Financing**

Balance in license funds, July 1, 1933.....	\$ 91,841.25
Receipts from sale of licenses and other sources.....	191,608.68
Appropriations.....	25,000.00
<b>Total Resources.....</b>	<b>\$308,449.93</b>

**Expenditures**

<i>Administration Costs</i> .....	\$23,195.19
<i>Acquisition of Fishing and Hunting Rights</i> .....	10,000.00
<i>Protection and Propagation of Inland Fishes</i>	
Field Supervisor.....	4,255.77
Warden Service.....	36,009.52
Trout Restoration.....	35,235.52
Shad Restoration.....	3,078.49
Pond Fish Restoration.....	5,487.93
Permanent Improvements.....	1,524.55
Transportation Equipment.....	1,628.46
Printing of Licenses and Buttons.....	1,179.34
Professional Services and Scientific Work.....	99.00
Miscellaneous.....	222.26
	<hr/>
	\$88,720.84

*Protection and Propagation of Marine Fishes*

Warden Service.....	2,389.16
Maintenance of Boat.....	1,305.10
Lobster Restoration.....	5,334.23
Flatfish Restoration.....	1,151.69
Smelt Restoration.....	695.61
Miscellaneous.....	341.79
	<hr/>
	\$11,217.58

*Protection and Propagation of Game*

Warden Service.....	35,215.85
Purchase and Restoration of Game.....	36,612.02
Game Sanctuaries.....	7,110.19
Game Survey.....	55.79
Game Management.....	550.91
Printing of Licenses and Buttons.....	1,175.59
Transportation Equipment.....	2,537.52
Miscellaneous.....	381.73
	<hr/>
	\$83,639.60

<b>Total Expenditures.....</b>	<b>\$216,773.21</b>
<b>Balance.....</b>	<b>91,676.72</b>

<b>\$308,449.93</b>	<b>\$308,449.93</b>
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## SUMMARY OF ANGLING AND HUNTING LICENSES ISSUED FOR THE YEAR 1932

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping (Minors)	Non-Resident or Alien Angling	Non-Resident Hunting	Non-Resident Combination	Non-Resident or Alien Property Owners Angling	Non-Resident Property Owners Hunting	Non-Resident Property Owners Combination
Hartford . . . . .	6,117	3,802	1,745	174	29	193	29	6	101	6	5
New Haven . . . . .	5,014	4,344	1,506	144	26	166	14	1	99	6	2
New London . . . . .	1,469	1,612	491	129	10	91	36	2	56	16	4
Fairfield . . . . .	3,877	4,638	1,313	134	21	223	82	5	56	15	21
Windham . . . . .	1,275	869	385	118	13	148	33	7	18	9	6
Litchfield . . . . .	3,169	1,879	1,095	170	19	324	54	8	138	12	15
Middlesex . . . . .	705	1,208	319	123	24	29	36	0	16	2	2
Tolland . . . . .	948	678	299	58	7	79	13	2	21	1	1
Totals . . . . .	22,574	19,030	7,153	1,050	149	1,253	297	31	505	67	56

## SUMMARY OF ANGLING AND HUNTING LICENSES ISSUED FOR THE YEAR 1933

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minors)	Non-Resident Angling	Allen Angling	Non-Resident Hunting	Non-Resident Combination	Non-Resident Property Owners Angling	Allen Property Owners Angling	Non-Resident Property Owners Hunting	Non-Resident Property Owners Combination
Hartford . . .	5,278	4,384	1,536	118	69	66	74	61	31	4	10	57	1	3
New Haven . .	4,304	4,772	1,229	104	32	30	42	72	14	3	5	68	3	2
New London . .	1,231	1,853	414	124	32	25	68	14	41	4	21	29	16	6
Fairfield . . .	3,271	4,688	1,102	80	33	26	173	21	73	3	28	21	29	17
Windham . . .	1,094	1,127	340	116	25	24	102	16	26	3	6	2	13	6
Litchfield . . .	2,939	1,972	899	143	39	28	271	25	48	5	76	31	16	12
Middlesex . . .	606	1,332	243	115	35	39	17	4	45	1	10	7	0	4
Tolland . . . .	827	761	261	56	16	12	47	7	14	1	13	13	2	1
Totals . . . . .	19,550	20,889	6,024	856	281	250	794	220	292	24	169	228	80	51

## FOOD VALUE OF WILD GAME TAKEN IN CONNECTICUT YEAR OF 1932

BASED ON VALUATION OF DRESSED WEIGHT  
AT THIRTY CENTS PER POUND

	Number Reported by 60% of License Holders	Estimate of Total Kill if 100% Reported	Average Live Weight*	Average Dressed Weight**	Value at 30 Cents per Pound
Brant.....	12	20	3.5 lbs.	2.1 lbs.	\$ 12.60
Ducks.....	18,313	30,521	2.5 lbs.	1.5 lbs.	13,734.45
Gallinules.....	29	48	14 ozs.	.52 lbs.	7.49
Geese.....	77	128	10.0 lbs.	6.0 lbs.	230.40
Mudhens.....	183	305	18 ozs.	.67 lbs.	61.30
Pheasants.....	26,513	44,188	3 lbs.	1.8 lbs.	23,861.52
Rails.....	5,872	9,786	4 ozs.	.15 lbs.	440.37
Grouse.....	12,974	21,623	21 ozs.	.78 lbs.	5,059.78
Wilson Snipe.....	438	730	4 ozs.	.15 lbs.	32.85
Woodcock.....	14,069	23,448	6.3 lbs.	.23 lbs.	1,617.91
<b>Total Wild Birds.....</b>					<b>\$45,058.67</b>
Squirrels.....	45,020	75,033	1.0 lbs.	.6 lbs.	13,505.94
Rabbits.....	50,381	83,968	2.2 lbs.	1.3 lbs.	32,747.52
Hares.....	607	1,011	3.0 lbs.	1.8 lbs.	545.94
<b>Total Wild Quadrupeds.....</b>					<b>\$46,799.40</b>
Average of 300 deer killed legally or by accident on highways each year. Dressed weight of 70 lbs. at 30 cents lb. gives annual food value of....					6,300.00
<b>Grand Total.....</b>					<b>\$98,158.07</b>

The replacement value of the wildlife taken in 1932 is estimated at \$444,691.25. This is based on the valuation used in previous reports.

\* Live weight of mammals from Seton, "Lives of Game Animals."

\*\* Live weight of birds from Forbush, "Birds of New England."

\*\* Dressed weight is taken as six-tenths of live weight.

## VALUE OF FUR BEARERS TAKEN IN CONNECTICUT YEAR OF 1932

	Estimated Number Taken		1932 Average Price	Total Fur Valuation
Bobcat.....	60	at	\$ 2.00	\$ 120.00
Fox, Red.....	2,500	at	4.00	10,000.00
Fox, Gray.....	2,500	at	2.00	5,000.00
Mink.....	800	at	8.00	6,400.00
Muskrat.....	40,000	at	.75	30,000.00
Otter.....	150	at	10.00	1,500.00
Raccoon.....	5,000	at	4.00	20,000.00
Skunk.....	10,000	at	.75	7,500.00
Weasel.....	1,200	at	.50	600.00
				<b>\$81,120.00</b>

Estimates based on reports by trappers and hunters compared with estimates of G. F. Daniels and H. F. Beebe, principal fur buyers in Connecticut.

H. F. Beebe estimates total value of \$100,000 at current prices and twice that amount in normal times.

## SUMMARY OF VALUE OF WILDLIFE RESOURCES

Food value of wild game (at 30 cents a pound dressed weight).....	\$98,158.07
Estimated food value of inland fishes (equal to wild game).....	98,158.07
Value of pelts from fur bearers.....	81,120.00

Total annual revenue from wildlife resources ..... \$277,436.14

This represents an annual dividend at 6% on the sum of \$4,623,936.00.

## RECORD OF DEER REPORTED KILLED

July 1, 1932 — June 30, 1934

County	Accident	Trains	Dogs	Autos	Destroying Property	Found Injured	Illegal	Unknown	Total
Hartford.....	1	0	1	11	4	1	1	0	19
New Haven.....	8	2	2	12	11	7	5	3	50
New London.....	2	4	1	10	43	7	10	2	79
Fairfield.....	4	3	5	21	26	8	9	5	81
Windham.....	7	6	3	24	96	9	11	11	167
Litchfield.....	4	4	9	26	25	17	15	0	100
Middlesex.....	2	0	0	6	10	1	8	2	29
Tolland.....	0	0	2	18	46	0	5	9	80
Totals.....	28	19	23	128	261	50	64	32	605

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1932 — June 30, 1934

County	Violations of Fish Laws	Violations of Game Laws	Total Violations	Total Convictions	Fines Paid	Costs Paid	Total Fines and Costs
Hartford.....	59	74	133	127	\$ 509.00	\$1,042.94	\$ 1,551.94
New Haven.....	73	94	167	150	519.00	1,407.75	1,926.75
New London.....	49	43	92	87	259.00	827.70	1,086.70
Fairfield.....	69	84	153	144	876.50	1,339.12	2,215.62
Windham.....	8	36	44	38	473.00	391.05	864.05
Litchfield.....	83	114	197	191	1,420.00	2,223.37	3,643.37
Middlesex.....	92	120	212	208	1,847.00	2,032.81	3,879.81
Tolland.....	22	44	66	66	459.50	613.85	1,073.35
Totals.....	455	609	1,064	1,011	\$6,363.00	\$9,878.59	\$16,241.59

Note: 95.2% of all arrests resulted in convictions.



Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Creamery Bk.	Granby	F	E.B. Salmon Bk.		*					
Creamery Bk.	East Granby	F	Sheldons Bk.		*					
Cushman Bk.	Granby	F	E.B. Salmon Bk.		*					
Dark Hollow Bk.	Glastonbury	F	Connecticut Riv.		*					
DeGray's Bk.	Suffield	F	Stony Bk.		*					
Devines Bk.	Suffield	F	Stony Bk.		*					
Dickinson Crk.	Glastonbury	S	Salmon Riv.	C-8	*	*	*			
Dividend Bk.	Rocky Hill	F	Connecticut Riv.		*					
Dry Bk.	So. Windsor	F	Scantic Riv.	C-2	*					
Eight Mile Riv.	Southington	S	Quinnipiac Riv.		*	*		*		
Farm Bk.	Windsor	F	Farmington Riv.	C-2		*				
Farmington Riv.		R	Connecticut Riv.	C-40		*		*		
Fawn Bk.	Marlboro	S	Blackledge Riv.	A-8½						
Filley Bk.	Bloomfield	F	Hog Riv.							
Flat Bk.	Glastonbury	F	Blackledge Riv.	A-2						
Folly Bk.	Manchester	F	S.B. Hock. Riv.	C-1¾						
Foot Saw Mill Bk.	Marlboro	F	Blackledge Riv.							
Fox Bk.	Hartland	F	E.B. Salmon Bk.							
Freshwater Bk.	Enfield	S	Connecticut Riv.		*	*				
Globe Hollow Bk.	Manchester	F	Hockanam Riv.	D-3						
Goff Bk.	Wethersfield	F	Connecticut Riv.		*					
Grannis Bk.	Rocky Hill									
Grape Bk.	Bristol	F	Eight Mile Riv.		*					
Great Bk.	Southington									
Great Pond Bk.	Enfield	F	Water Works Bk.							
Griffin Bk.	Farmington	F	Farmington Riv.	C-1½						
Gully Bk.	Simsbury	F	Hop Bk.	D						
Hales Bk.	Simsbury	F	Farmington Riv.							
Hatchery Bk.	Hartford	F	Park Riv.							
Higley Bk.	Glastonbury	F	Connecticut Riv.			*				
Hockanam Riv.	Berlin	F	Mattabassett R.			*				
Hockanam Riv. S.B.	Granby	F	W.B. Salmon Bk.							
Hog Riv.	E. Hartford	R	Connecticut Riv.	D-19						
Hog Bk.	Manchester									
Hop Bk.	Manchester	S	Hockanam Riv.	B-1½, C-3½						
Howell Pond Bk.	Bloomfield	S	Park Riv.							
Hurricane Bk.	W. Hartford									
Hyde Bk.	Rocky Hill	F	Connecticut Riv.		*					
Iron Ore Bk.	Canton	S	Farmington Riv.	B-6						
Jim's Bk.	Simsbury									
Judd Bk.	Hartland	S	W.B. Farm. Riv.	A-3	*					
Kendall Bk.	Hartland	F	Valley Bk.	D-1½						
Ketch Bk.	Farmington	F	Farmington Riv.		*					
Kettle Bk.	Windsor	F	Mill Bk.		*					
Little Bk.	Canton	F	Cherry Bk.		*					
Lyman Bk.	Southington	F	Eight Mile River		*					
Manchester Gr. Bk.	Granby	F	Salmon Bk.		*					
Marsh Bk.	East Windsor	S	Scantic Riv.	A-4½	*					
Marshall Phelps	Windsor Locks	F	Connecticut Riv.				*			
Farm Bk.	East Granby	F	Muddy Bk.		*					
	Marlboro	F	Blackledge Riv.	A-3						
	Manchester	F	Hockanam Riv.	C-2, D-1½						
	Burlington	F	Pequabuck Riv.	C-1½						
	Windsor	F	Farmington Riv.	C-2						

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Mattabassett Riv.	Berlin	R	Connecticut Riv.							
Meadow Bk.	Windsor	S	Connecticut Riv.							
	Hartford									
Mill Bk.	Windsor	S	Farmington Riv.	C-5	*	*				
	Bloomfield									
Misery Bk.	Southington	S	Quinnipiac Riv.		*					
Mix Bk.	Bristol	F	Eight Mile Riv.		*					
Moose Horn Bk.	Granby	F	W.B. Salmon Bk.							
Morgan Bk.	Granby	F	E.B. Salmon Bk.	C-1½	*					
Mountain Bk.	Hartland	S	E.B. Salmon Bk.	D-1½						
	Granby									
Muddy Bk.	East Granby	S	Salmon Bk.	B-3¾	*					
Muddy Bk.	Suffield	S	Stony Bk.		*					
Namerick Bk.	East Windsor	F	Connecticut Riv.							
Nod Bk.	Simsbury	F	Farmington Riv.		*					
	Avon									
North Branch Bk.	Southington	S	Ten Mile Riv.							
Noyes Bk.	W. Hartford	F	Trout Bk.							
Park Riv.	Hartford	R	Connecticut Riv.							
	W. Hartford									
	Farmington									
	New Britain									
	Newington									
Patton Bk.	Southington	F	Quinnipiac Riv.		*					
Peck's Bk.	East Windsor	F	Ketch Bk.	B-2						
	Ellington									
Pequabuck Riv.	Bristol	R	Farmington Riv.	D-16						
	Plainville									
	Farmington									
Perkins Bk.	Windsor	F	Farmington Riv.							
Pewterpot Bk.	East Hartford	S	Keeney Cove		*					
Phelps Bk.	Burlington	F	Nepaug Reserv.							
Pierce Bk.	Enfield	F	Buckhorn Bk.	C-1						
Piper Bk.	Newington	F	Park Riv.							
Podunk Riv.	So. Windsor	R	Connecticut Riv.		*					
Polebank Bk.	So. Windsor	F	Hockanum Riv.	B-2¾						
Polkville Bk.	Bristol	F	Copper Mine Bk.	B-3¾	*					
Poplar Swamp Bk.	Farmington	F	Farmington Riv.							
Porter Bk.	East Hartford	F	Keeney Cove		*					
	Glastonbury									
Porter Res. Bk.	Manchester	F	S.B. Hock. Riv.	D-1						
Powder Bk.	Burlington	F	Poland Riv.	C-2						
Pumping Sta. Bk.	Berlin	S	Mattabassett R.		*					
Punch Bk.	Burlington	F	Burlington Bk.							
Quinnipiac Riv.	Plainville	R	Long Island						*	
	New Britain		Sound							
	Southington									
Rainbow Bk.	Windsor	F	Farmington Riv.							
	Windsor Locks									
Rattlesnake Hill Bk.	Canton	F	Farmington Riv.	C-2¾						
Roaring Bk.	Canton, Avon	S	Farmington Riv.	B-7½	*					
	Farmington									
Roaring Bk.	Southington	F	Eight Mile Riv.		*					
	Wolcott									
Roaring Bk.	Glastonbury	S	Connecticut Riv.			*		*		
Salmon Bk.	Granby	S	Farmington Riv.	A-1¾						
	East Granby									
Salmon Bk. E.B.	Granby	S	Salmon Bk.	A-10½		*				

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Salmon Bk. W. B.	Granby	S	Salmon Bk.	A-10½		*				
	Hartland									
Salmon Bk.	Glastonbury	S	Connecticut Riv.		*					
Sanborn B.	East Granby	F	Sheldon's Bk.		*					
Scantic Riv.	Enfield	R	Connecticut Riv.	B-4, C-14			*	*		
	East Windsor									
	So. Windsor									
Scott Swamp Bk.	Farmington	F	Pequabuck Riv.	C-4½						
Sheldon Bk.	East Granby	F	Stony Bk.							
Simason Bk.	Hartland	F	W.B. Salmon Bk.							
Slab Gut Bk.	Glastonbury	F	Roaring Bk.		*					
South Mountain Bk.	Bristol	F	Pequabuck Riv.	D-2½						
Spears Bk.	Suffield	F	Whittemore Bk.							
Spencer Bk.	Suffield	F	Stony Bk.		*					
Spring Glen Bk.	East Windsor	F	Scantic Riv.	C-1	*					
State Hatchery Bk.	Burlington	F	Burlington Bk.	A-1½						
State Line Bk.	Suffield	F	Stony Bk.							
	East Granby									
Stony Bk.	Suffield	S	Connecticut Riv.				*	*		
	East Granby									
Stoughton Bk.	So. Windsor	F	Connecticut Riv.							
Stratton Bk.	Simsbury	F	Hop Brook	A-4½	*					
	Canton									
Strawberry Meadow Bk.	Windsor	F	Farmington Riv.				*			
	Windsor Locks									
Ten Mile Riv.	Southington	S	Quinnipiac Riv.	B-6						
Terry Bk.	Enfield	F	Scantic Riv.	C-3	*	*				
Thompson Bk.	Avon	S	Farmington Riv.		*					
Tumble Bk.	Bloomfield	F	Farmington Riv.		*					
Trout Bk.	W. Hartford	S	Park Riv.							
	Farmington									
Trout Bk.	Plainville	F	Quinnipiac Riv.		*					
Tunxis Reserv. Bk.	Hartland	F	E.B. Farm. Riv.	B-2						
Unionville Bk.	Burlington	F	Farmington Riv.	C-2½						
	Farmington									
Valley Bk.	Hartland	F	E.B. Farm. Riv.	A-1						
Wash Bk.	Bloomfield	F	Hog River							
Water Works Bk.	Windsor Locks	F	Connecticut Riv.		*					
Water Works Bk.	Enfield	F	Connecticut Riv.		*	*				
Webster Bk.	Newington	F	Willow Bk.							
Welden Bk.	Simsbury	F	Hop Bk.		*					
Wells Bk.	So. Windsor	F	Pole Bank Bk.	D-1						
West Bk.	Windsor	F	Farmington Riv.							
Whittemore Bk.	Suffield	S	Muddy Bk.		*					
Wiggin Bk.	Avon	F	Nod Bk.		*					
Wild Cat Bk.	Burlington	F	Copper Mine Bk.		*					
Willow Bk.	New Britain	F	Hockanum Riv.	D-3	*					
	Berlin									
Willow Bk.	East Hartford	S	Hockanum River							
Zogg Bk.	Avon,	F	Nod Bk.	A-5½	*					
	Simsbury									

## NEW HAVEN COUNTY

Allen Bk.	Wallingford	F	Wharton Bk.							
Beaver Bk.	Ansonia	F	Naguatuck Riv.	D-3						
	Seymour									
Beaver Bk.	Milford	F	Housatonic Riv.							

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Beaver Pond Bk.	Waterbury	F Mad Riv.	C-2½						
Bladens Riv.	Seymour	S Naugatuck Riv.	C-5		*				
	Woodbridge								
Black Bk.	Woodbridge	F Bladens Riv.							
Bluff Head Bk.	Guilford	F Coginchaug Riv.							
Bradley Bk.	Middlebury	F Long Meadow Pond Bk.			*				
Branch Bk.	Guilford	F West River							
Branford Riv.	No. Branford	S Long Island Sd.	B-8				*		
	Branford								
Broad Bk.	Cheshire	F Broad Bk. Reser.	C-4						
Bronson Bk.	Beacon Falls	F Naugatuck Riv.			*				
Brookvale Stream	Cheshire	F Willow Bk.	C-2½						
	Hamden								
Bullett Hill Bk.	Southbury	F Pomperaug Riv.	C-3½						
Bullett Hill Bk. S.B.	Southbury	F Bullett Hill Bk.	C						
Butterworth Bk.	Cheshire	S Mill Riv.							
	Wallingford								
	North Haven								
Cathole Bk.	Meriden	F Sodom Bk.	D-2½						
Catlin Bk.	Wallingford	F Wharton Bk.	D-2						
Chase Bk.	Waterbury	F Naguatuck Riv.							
Christens Bk.	Madison	F Hammonasset R.							
Christenson Bk.	Oxford	F Housatonic R.							
Clough Bk.	Waterbury	F Steele Bk.							
Coginchaug Riv.	Guilford	R Mattabassett R.	B-14						
Cotton Hollow Bk.	Naugatuck	S Naugatuck Riv.	B-3½				*		
	Bethany								
Cove Riv.	West Haven	S Long Island Sd.	D-4						
Crow Hill Bk.	Meriden	F Sodom Bk.							
Cuff Bk.	Cheshire	F Ten Mile Riv.							
Davidson Bk.	Bethany	F West Riv.							
Dowd Hollow Bk.	Madison	S East Riv.	C-3½						
East Riv.	Guilford	S Long Island Sd.	C-8						
	Madison								
East Mountain Bk.	Waterbury	F Beaver Pond Bk.							
Eight Mile Bk.	Southbury	F Muddy Bk.							
	Middlebury								
	Oxford								
Eight Mile Bk.	North Haven	R Housatonic Riv.	B-10	*	*				
	No. Branford								
Falls Bk.	Wolcott	F North Branch Bk.							
Farm Riv.	East Haven	R Long Island Sd.	B-14						*
	No. Branford								
	Guilford								
Five Mile Bk.	Oxford	F Housatonic Riv.	D-2½	*	*				
Five Mile Bk.	North Haven	F Muddy Riv.	C-4						
Four Mile Bk.	Oxford	F Housatonic Riv.							
	Seymour								
Goat Bk.	Middlebury	F Hop Bk.	C-1¾						
Good Hill Bk.	Oxford	F Housatonic Riv.							
Grassy Hill Bk.	Derby	F Housatonic Riv.	D-1½						
	Orange								
Graystone Bk.	Waterbury	F Naugatuck Riv.							
Great Hill Bk.	Seymour	F Housatonic Riv.	D-1¾						
	Derby								
Gulf Bk.	No. Branford	F Farm Riv.							
Hall Lot Bk.	Guilford	F Little Meadow Bk.							
Hammonasset Riv.	Madison	R Long Island Sd.	B-13						

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Hancock Bk.	Waterbury	S Naugatuck Riv.	B-8½	*	*				
Harbor Bk.	Meriden	S Quinnipiac Riv.	C-7½	*					
Harbor Bk. E.B.	Meriden	F Harbor Bk.	D-¾	*					
Harbor Bk. N.B.	Meriden	F Harbor Bk.	C-2						
Hemp Swamp Bk.	Oxford	F Pines Bk.	B-½						
	Beacon Falls								
Hitchcock Lake Bk.	Wolcott	F Mad Riv.	B-2						
Hockanum Bk.	Beacon Falls	F Bronson Bk.	C-3						
	Bethany								
Honey Pot Bk.	Cheshire	S Quinnipiac Riv.	C-4½						
Hop Bk.	Middlebury	S Naugatuck Riv.			*				
	Naugatuck								
	Waterbury								
Hopeville Pond Bk.	Waterbury	F Naugatuck Riv.	C						
Hopp Bk.	Bethany	F Bladens Riv.	B-3½						
Horse Pond Bk.	Madison	F Hammonasset R.							
Housatonic Riv.		R Long Island Sd.							
Hull Hill Bk.	Oxford	F Housatonic Riv.							
Indian Riv.	Orange	S Long Island Sd.	C-7½	*					
	Milford								
Iron Stream	Madison	S East Riv.	C-5						
Jacks Bk.	Oxford	F Little Riv.	B-3½	*					
Jepp Bk.	Hamden	F West Woods Bk.							
Jermey Bk.	Southbury	F Eight Mile Riv.	C-2						
Kettletown Bk.	Southbury	F Housatonic Riv.							
Lee Bk.	Southbury	F Housatonic Riv.							
Lilly Bk.	Wolcott	F Mad Riv.	B-2						
Lindley Bk.	Wolcott	F Mad Riv.	B-2½						
Little Meadow Bk.	Guilford	F East Riv.	C-3½						
Little Pootatuck Bk.	Southbury	F Housatonic Riv.							
Little Riv.	Oxford	S Naugatuck Riv.	B-3, D-3½	*	*				
Little Riv.	East Haven	F Quinnipiac Riv.							
	North Haven								
Little Turkey Hill Bk.	Milford	F Housatonic Riv.							
	Orange								
Long Meadow Pond Bk.	Naugatuck	F Naugatuck Riv.							
Long Meadow Bk.	Middlebury	F L. Meadow Pd.	B-6, D-1¾		*	*	*		
Long Swamp Bk.	Middlebury	F Hop Bk.	C-3½						
Mad Riv.	Waterbury	S Naugatuck Riv.	B-9	*	*				
	Wolcott								
Maloney Bk.	East Haven	F Farm Riv.	D-2						
Marks Bk.	Naugatuck	F Cotton Hollow Bk.							
	Prospect								
Meetinghouse Bk.	Meriden	F Quinnipiac Riv.	C-3½	*					
	Wallingford								
Mill River	Cheshire	R Long Island Sd.	B-17		*				
	New Haven								
	Hamden								
	North Haven								
Mixville Bk.	Prospect	F Ten Mile Riv.		*					
Morris Creek	East Haven	F Long Island Sd.							
Mountain Bk.	Prospect	F Ten Mile Riv.	B-1, C-2						
	Cheshire								
Mad Riv.	Seymour	F Naugatuck Riv.	C						
Muddy Riv.	Wallingford	R Quinnipiac Riv.	B-17		*		*		
	North Haven								
Munger Bk.	No. Branford	F Branford Riv.	C-2¾		*				
Naugatuck Riv.		R Long Island Sd.	D-34						

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Neck Riv.	Madison	S	Long Island Sd.	B-9½		*				
North Branch Bk.	Cheshire	F	Ten Mile Riv.							
Notch Hill Bk.	No. Branford	F	Branford Riv.							
Oyster Riv.	No. Branford	F	Long Island Sd.	C-3½						
Paden's Bk.	Wallingford	F	Quinnipiac Riv.							
Parks Bk.	Oxford	F	Little Riv.							
Pine Bk.	North Haven	F	Quinnipiac Riv.	D-2						
Pine Bk.	Bethany	F	Bladens Riv.	B-2½						
Pines Bk.	Oxford	F	Naugatuck Riv.	B-2½						
Pisgah Bk.	Beacon Falls									
Pink House Cove Bk.	Branford	F	Branford Riv.	C-3½						
Pomperaug Riv.	Derby	F	Housatonic Riv.							
Prospect St. Bk.	Southbury	R	Housatonic Riv.	C-12						
	Naugatuck	F	Naugatuck Riv.	D-3						
	Prospect									
Purchase Bk.	Southbury	F	Housatonic Riv.							
Quinnipiac Riv.		R	Long Island			*		*		*
Race Bk.	Woodbridge	F	Wepawaug Riv.	B-5½						
	Orange									
Rigg St. Bk.	Oxford	F	Jacks Bk.	C-2						
Rimmon Bk.	Beacon Falls	F	Naugatuck Riv.	C-1½		*				
	Seymour									
Roaring Bk.	Prospect	F	Willow Bk.	C-2						
	Cheshire									
Sanford Bk.	Prospect	F	Willow Bk.	C-2						
	Cheshire									
Sargent Riv.	Bethany	F	West Riv.	C-5½						
	Woodbridge									
School House Bk.	Oxford	F	Housatonic Riv.							
School House Bk.	Guilford	F	West River							
Seymour Saw Mill Pond Bk.	Oxford	F	Little Riv.	C-1½						
Seven Mile Bk.	Oxford	F	Eight Mile Bk.							
Shattuck Bk.	Middlebury	F	Hop Bk.	C-2½		*	*			
	Naugatuck									
Sheppard Bk.	Hamden	F	Mill Riv.							
Shepaug Riv.	Southbury	R	Housatonic Riv.	A-24, C-3						
Silver Bk.	Woodbridge	F	Indian Riv.	C-4½						
	Orange									
Six Mile Bk.	Oxford	F	Eight Mile Riv.	D-2		*				
Sodom Bk.	Meriden	F	Quinnipiac Riv.	D-1½		*				
South Branch Bk.	Cheshire	F	Ten Mile Riv.							
Spindle Hill Bk.	Waterbury	F	Naugatuck Riv.	D						
Spring Bk.	Wallingford	F	Muddy Riv.							
Spruce Bk.	Southbury	F	Transylvania Bk.	C-2						
Spruce Bk.	Naugatuck	F	Naugatuck Riv.			*	*			
	Beacon Falls									
Spruce Glen Bk.	Meriden	F	Meetinghouse Bk.	D-1½		*				
	Wallingford									
Steel Bk.	Waterbury	S	Naugatuck Riv.	D-7						
Stiles Bk.	Southbury	F	Pomperaug Riv.	D						
Straitsville Bk.	Naugatuck	F	Cotton Hollow Bk.							
Tanvat Bk.	Waterbury	F	Whelton Bk.							
Ten Mile Riv.	Cheshire	S	Quinnipiac Riv.	B-6		*				*
Towantic Bk.	Oxford	F	Little Riv.	C-3		*	*			
Towantic Pond Bk.	Oxford	F	Long Meadow Pond Bk.	D						



Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Billings Avery Bk.	Ledyard	F Thames Riv.	A-3						
Bindloss Bk.	Groton	F Mystic Riv.	A-2	*					
Blackhall Riv.	Old Lyme	S Long Island Sd.	B-3						
Blackhall R. N.E.B.	Old Lyme	F Blackhall Riv.	A-2						
Blackledge Riv.	Colchester	R Salmon Riv.	B-14½		*		*		
Blissville Bk.	Lisbon	F Shetucket Riv.	A-4	*	*				
Bliven Bk.	Voluntown	F Pachaug Riv.							
Bobbin Mill Bk.	Norwich	F Yantic Riv.							
Brides Bk.	East Lyme	F Long Island Sd.	A-1½, C-½						
Broad Bk.	Preston	S Quinebaug Riv.	B-4½						
Brouseau's Pond Bk.	Lebanon	F Ten Mile Riv.	C-1½						
Buhler Bk.	Lisbon	F Cory Bk.							
Burton Bk.	Griswold	F Pachaug Pond	C-1½						
Burgess Bk.	Lebanon	F Susquetonscut Bk.							
Byron Bk.	Norwich	F Shetucket Riv.	A-2						
Cabin Bk.	Colchester	F Meadow Bk.							
Cedar Pond Bk.	Lyme	F Beaver Bk.							
Cedar Swamp Pond Bk.	Lebanon	F Yantic Riv.							
Chappell Bk.	Montville	F Stony Bk.							
Choate Bk.	Preston	F Quinebaug Riv.	A-4½						
Cold Bk.	Norwich	F Shetucket Riv.	A-2						
Cold Bk.	Franklin	F Shetucket Riv.	C-1½	*					
Connecticut Riv.									
Copp's Bk.	Stonington	S Long Island Sd.	A-3, C-1½	*					
Copp's Bk. E.B.	Stonington	F Copp's Bk.	C-2						
Cranberry Meadow Bk.	East Lyme	F Latimers Bk.	A-3		*				
Crowley Bk.	Preston	F Indiantown Bk.	C-2½						
Culver Bk.	Groton	F Great Bk.	B-1						
Day Meadow Bk.	Colchester	F Salmon Riv.	C-1½						
Day Pond Bk.	Colchester	F Salmon Riv.	A-2						
Deep River	Colchester	S Yantic Riv.	A-5	*					
Denison Bk.	Voluntown	F Pachaug Riv.	B-3½	*	*				
Derry Hill Bk.	Montville	F Thames Riv.	C-1						
Dickermans Bk.	Preston	F Poquetanock Cove							
Dickinson Creek	Colchester	S Salmon Riv.	C-8	*	*	*			
Dixon Bk.	Lebanon	F Yantic Riv.					*		
	Bozrah								
Donahue Bk.	Stonington	F Long Island Sd.	A-1½						
Duck Riv.	Old Lyme	F Connecticut Riv.							
Eccleston Bk.	Groton	F Long Island Sd.							
Ed Lamb Bk.	Ledyard	F Haley Bk.	A-1						
Eight Mile Riv.	Lyme	S Connecticut Riv.	B-9						
Eight Mile Riv. E.B.	Lyme, Salem	S Eight Mile Riv.	C-9						
Exeter Bk.	Lebanon	F Bartlett Bk.							
Fairy Lake Bk.	Salem	F Harris Bk.							
Falls Bk.	Lyme	F Eight Mile River Cove	C-3½						
Flat Bk.	Ledyard	F Thames Riv.	A-1½						
Fort Hill Bk.	Groton	F Long Island Sd.	B-3½						
Folwix Bk.	Preston	F Choate Bk.							
Four Mile Riv.	East Lyme	S Long Island Sd.	B-7½			*	*		
Fox Bk.	Montville	F Oxoboxo Bk.							
Gardner Bk.	Norwich	F Willow Bk.							
Gardner Bk.	Bozrah	S Yantic Riv.	C-7	*		*			
Geer Bk.	Preston	F Indiantown Bk.							
Great Meadow Bk.	Voluntown	F Pachaug Riv.	A-4, C-1	*	*				

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Green Falls Riv.	N. Stonington	S Pawcatuck Riv.	A-4½, B-1½						
	Voluntown								
Gillette Bk.	Lebanon	F Yantic Riv.							
Gillette Bk.	Colchester	F Meadow Bk.							
Gold Mine Bk.	Bozrah	F Trading Cove Bk.		*	*				
	Norwich								
Goshen Bk.	Lebanon	F Yantic Riv.	B-2½						
Governor Bk.	Colchester	F Meadow Bk.	B						
Grassy Hill Bk.	Old Lyme	F Rogers Lake							
	Lyme								
Great Bk.	Ledyard	S Long Island Sd.	A-5, C-2	*	*				
	Groton								
Great Plain Bk.	Norwich	F Trading Cove Bk.							
Gurley Bk.	East Lyme	F Niantic Riv.	A-1						
Haley Bk.	Ledyard	S Niantic Riv.	B-3, C-3						
	Groton								
Hall Bk.	Colchester	F Sherman Bk.							
Hall Reservoir Bk.	Preston	F Amasa Main Bk.	C-1½						
	N. Stonington								
Hanover Bk.	Norwich	F Yantic Riv.	A-2½	*					
Harris Bk.	Salem	F E.B. Eight Mile Riv.	B-3						
Havey Bk.	Griswold	F Clayville Pond		*					
Hawkins Bk.	Griswold	F Pachaug Pond	B-1½						
Hempstead Bk.	Groton	F Great Bk.	B-2½	*					
Hetchell Swamp Bk.	N. Stonington	F Pendleton Hill Bk.					*		
Hewitt Bk.	Preston	F Indiantown Bk.	A-2						
Hollowell Bk.	Preston	F Broad Bk.	A-2½						
Horse Bk.	Voluntown	F Pachaug Riv.							
Horse Pond Bk.	Salem	F Latimers Bk.							
Hoxie Bk.	Lebanon	F Pease Bk.				*			
Hunters Bk.	Norwich	F Shetucket Riv.							
Hunts Bk.	Montville	S Thames Riv.	A-5	*	*	*	*		
	Waterford								
Indiantown Bk.	Ledyard	S Thames Riv.						*	
	Preston								
Joe Clark Bk.	Ledyard	F Poquetanuck Cove		*					
Johnnycake Bk.	Franklin	F Susquetanscut R.							
Jordan Bk.	Waterford	S Long Island Sd.	A-5	*	*	*			
Joshua Creek	Lyme	F Connecticut Riv.							
Judd Bk.	Colchester	F Salmon Riv.	C-2½						
Kahn Bk.	Bozrah	F Yantic Riv.							
Lakes Pond Bk.	Waterford	F Niantic Riv.	A-2½						
Lampers Bk.	Stonington	F Whitfords Bk.	B-1½	*					
Latham Bk.	Griswold	F Pachaug Pond							
Lantern Hill Bk.	N. Stonington	F Long Pond	A-2½						
Latimer Bk.	East Lyme	S Niantic Riv.	A-9	*	*				
	Montville								
Laysville Bk.	Old Lyme	F Lieutenant R.							
Leed's Main Bk.	Ledyard	F Seth Williams Bk.	A-1½						
Ledges Bk.	Waterford	F Long Island Sd.							
Lewis Bk.	Voluntown	F Pachaug Riv.							
Lieutenant Riv.	Old Lyme	F Connecticut Riv.	C-3						
Lisbon Bk.	Lisbon	F Quinebaug Riv.							
Little Bk.	Salem	F E.B. Eight Mile Riv.							
Little Riv.	Sprague	S Shetucket Riv.	A-16½ (Poll. 4)	*	*			*	
Lowden Bk.	Voluntown	F Mt. Misery Bk.	A-2½						



Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Prospect Hill Bk.	Lebanon	F Obwebetuck Bk.	C-2½						
Quinebaug Riv.	Windham								
	Lisbon	R Shetucket Riv.	D-46, C-3½						
	Preston		(Poll. 49¼)						
Rattlesnake Bk.	Griswold	F Broad Bk.	C-3½						
	Norwich								
Reed Bk.	Lisbon	F Quinebaug Riv.	C-1½, B-½						
Red Bk.	Ledyard	F Haley Bk.	A-2½						
Red Bk. W.B.	Groton	F Red Bk.	C to D-1¾						
	Ledyard								
Red Bk.	East Lyme	F Long Island Sd.	A-2½	*					
Reservoir Bk.	Griswold	F Mill Bk.							
Riel Bk.	Sprague	F Beaver Bk.		*					
Roaring Bk.	Lyme	F Connecticut Riv.							
Rose Hill Bk.	Ledyard	F Indiantown Bk.		*					
Salmon Riv.	Preston								
	Colchester	R Connecticut Riv.	C-13		*			*	
Sandy Bk.	Waterford	F Hunts Bk.			*				
	Montville								
Sandy Hollow Bk.	Ledyard	F Great Bk.							
Sawmill Bk.	Old Lyme	F Blackhall Riv.	D-1½						
Selden Creek	Lyme	F Connecticut Riv.							
Seth Williams Bk.	Ledyard	S Whitfords Bk.	A-2½, B-3¾	*	*				
Sheep Barn Bk.	Preston	F Broad Bk.	C-1½						
	Griswold								
Sherman Bk.	Colchester	F Yantic River							
Shetucket Riv.	Norwich	R Thames Riv.							
	Franklin								
	Sprague								
Shingle Mill Bk.	Salem	F Fairy Lake Bk.							
Shingle Mill Bk.	N. Stonington	F Green Falls Riv.	B-2½						
Shunock Bk.	N. Stonington	S Pawcatuck Riv.	B-3¾	*	*				
Silex Mine Bk.	N. Stonington	F Long Pond	A-1½				*		
Spencer Pond Bk.	Lebanon	F Shetucket Riv.	D-¾						
Standish Bk.	Colchester	F Babcock Pond							
Sterrie Kinnie Bk.	Griswold	F Woodmansee Bk.	A-1¾	*					
Stick Bridge Bk.	Norwich	F Yantic Riv.	A-1						
	Franklin								
Stony Bk.	Stonington	F Long Island Sd.	C-2						
Stony Bk.	Waterford	F Niantic Riv.	B-2	*	*				
Stony Bk.	Montville	S Thames Riv.	A-6	*	*				
Susquetonscut Bk.	Lebanon	S Yantic Riv.	B-9	*	*	*			
	Bozrah								
	Franklin								
Tadma Bk.	Bozrah	F Trading Cove Bk.		*					
Ten Mile Riv.	Lebanon	S Willimantic Riv.	B-2½, C-2	*	*				
Thames Riv.	Norwich	R Long Island Sd.							
	Montville								
	Ledyard								
	Waterford								
Thompson Bk.	Griswold	F Pachaug Riv.							
Thompson Bk.	Ledyard	F Great Bk.	A-1½						
	Groton								
Thompson Bk.	N. Stonington	F Pawcatuck Riv.	A-2						
Three Mile Bk.	Old Lyme	F Long Island Sd.							
Tisdale Bk.	Lyme	F Falls Bk.							
Tiffany Bk.	Griswold	F Thompson Bk.							

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Tom Allen Bk.	Ledyard	F	Thames Riv.							
Trading Cove Bk.	Bozrah	S	Thames Riv.	A-5 $\frac{1}{4}$	*					
	Montville									
	Norwich									
Waldo Bk.	Sprague	F	Shetucket Riv.							
Waterman Bk.	Lebanon	F	Yantic Riv.							
Wheeler Bk.	Stonington	F	Anguilla Bk.							
Whitfords Bk.	Groton	S	Mystic Riv.		*	*				
	Stonington									
	Ledyard									
Whittle Bk.	Montville	F	Gardner Lake		*					
Wilcox Bk.	Griswold	F	Pachaug Riv.		*					
Willow Bk.	Norwich	F	Trading Cove Bk.							
Willow Meadow Bk.	Waterford	F	Lakes Pond Bk.							
Witch Meadow Bk.	Salem	F	E.B. Eight Mile Riv.							
Wood Riv.	Voluntown	S	Rhode Island							
Woodmansee Bk.	Griswold	F	Billings Bk.		*					
Wyassup Bk.	N. Stonington	S	Spaulding Pond	B-3 $\frac{1}{2}$	*	*		*		
Yantic Riv.	Bozrah	R	Thames Riv.	C-2 $\frac{1}{2}$ , D			*	*		*
	Norwich									
	Lebanon									
Yawbux Bk.	N. Stonington	F	Shunock Bk.	A-2 $\frac{1}{2}$	*					

## FAIRFIELD COUNTY

Adams Bk.	Wilton	F	W.B. Saugatuck Riv.	C	*					
	Weston									
Aspetuck Riv.	Westport	S	Saugatuck Riv.	A-8						
	Fairfield									
	Weston									
	Easton									
	Redding									
	Newtown									
Ayers Bk.	Stamford	F	Rippowam Riv.	C-2			*			
Ball Pond Bk.	New Fairfield	S	Candlewood Lake	C-3 $\frac{1}{2}$		*				*
Ballwall Bk.	Easton	F	Aspetuck Riv.	C-8						
Barretts Bk.	Wilton	F	Comstock Bk.	C-3	*					
Bates Bk.	New Fairfield	F	Ball Pond Bk.	D-1	*					
Beardsleys Bk.	Monroe	F	Farmill River	D-1	*					
Beaver Bk.	Weston	F	Saugatuck Riv.							
Beaver Mt. Bk.	Brookfield	F	Still Riv.	C-1						
Belden Hill Bk.	Wilton	F	Silvermine Bk.	D-1 $\frac{1}{2}$						
Bennetts Farm Bk.	Ridgefield	F	Saugatuck Riv.							
Bethel Bk.	Bethel	F	Sympaug Bk.	C-2 $\frac{1}{2}$						
Bethel Res. Bk.	Danbury	F	Sympaug Bk.	C-1 $\frac{1}{2}$						
Betts Pond Bk.	Norwalk	F	Norwalk Riv.	C-2						
Black Bk.	Shelton	F	Farmill Riv.	B-1 $\frac{1}{4}$	*					
Blackman's Pd. Bk.	Redding	F	Saugatuck Riv.	C-2 $\frac{1}{2}$						
Boehm Bk.	Shelton	F	Farmill Riv.		*					
Boggs Pond Bk.	Danbury	S	Still Riv.	C-3, D-1 $\frac{1}{2}$						
Bogus Mt. Bk.	Redding	F	Saugatuck Riv.	D- $\frac{1}{2}$						
	Bethel									
Boone Bk.	Wilton	F	W.B. Saugatuck Riv.	D-1 $\frac{1}{2}$						
Booth Hill Rd. Bk.	Shelton	F	Isinglass Res.	D- $\frac{3}{4}$	*					
Booth Hill Bk.	Trumbull	F	Pequonock Riv.							

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Boys Halfway Riv.	Monroe	F	Housatonic Riv.	C-4	*	*				
Branchville Bk.	Redding	F	Norwalk Riv.	C-1	*					
Braunies Bk.	Bethel	F	Bethel Res. Bk.							
Brothers Bk.	Greenwich	F	Cos Cob Harbor	D-3½						
Brownell's Bk.	Brookfield	F	Still Riv.							
Browns Bk.	Fairfield	F	Mill Riv.	D-2¾						
Bruce Bk.	Stratford	F	Long Island Sd.	D-3						
Butternut Hollow Bk.	Shelton	F	Housatonic Riv.	C-¾						
Byram Bk.	Greenwich	R	Long Island Sd.	C-9, D-3½						
Byram Riv. E.B.	Greenwich	F	Byram Riv.	C-4½						
Canoe Bk.	Trumbull	F	Easton Res.	D-3						
Cavanaughs Bk.	Newtown	F	Housatonic Riv.		*					
Cemetery Bk.	Danbury	F	Padanaram Res. Bk.	D-½						
Cemetery Bk.	Redding	F	Moffitt's Bk.	D-¾						
Chas. Pickney's Bk.	Brookfield	F	Still Riv.	C-¾						
Chestnut Hill Bk.	Trumbull	F	Horse Tavern Bk.							
Chestnut Hill Bk.	Wilton	F	Norwalk River	C-1½	*					
Chub Bk.	Trumbull Easton	F	Easton Res.	D-1½						
Cold Spring Bk.	Newtown	F	Farrell's Pd. Bk.	B-2						
Comstock Bk.	Wilton	S	Norwalk Riv.	B-5¾	*					
Comstock Bk. E.B.	Wilton	F	Comstock Bk.	D-2						
Converse Pond Bk.	Greenwich	S	E. B. Byram Riv.	C-5½						
Coopers Bk.	Ridgefield	F	Norwalk Riv.	C-2						
Copper Mine Bk.	Monroe	F	Simmons Bk.	C-1½	*					
Corbett Bk.	Newtown	F	Pootatuck Riv.	B-1½	*					
Corner Pond Bk.	Danbury	F	Croton R., N.Y.	C-1½						
Corwin Hill Bk.	Shelton	F	Housatonic Riv.							
Country Club Bk.	Newtown	F	West Plain Bk.	D-1½	*					
Cranberry Pond Bk.	Stratford	F	Nigger Bk.	D-1						
Cricker Bk.	Fairfield	F	Samp Mortar Res.							
Crystal Lake Bk.	Norwalk	F	Norwalk Riv.	D-¾						
Cummings Bk.	Darien	F	Stony Bk.	D-1½						
Curtis Pond Bk.	Newtown	F	Pootatuck Riv.	C-3	*					
Dave Coly Bk.	Weston	F	Saugatuck Riv.	D-¾						
Davidge Bk.	Weston	F	Beaver Bk.	D-1½						
David Worden Bk.	New Fairfield	F	Candlewood Lake							
Deadman Bk.	Westport	F	Saugatuck Riv.	C-3¾						
Deep Hollow Bk.	New Fairfield	F	Ball Pond Bk.	D-¾						
Dibbles Bk.	Bethel	F	Lime Kiln Bk.	C-2	*					
Doyle's Ice Pd. Bk.	Danbury	F	Candlewood Lake	D-1						
Eagan Bk.	Newtown	F	Pootatuck Riv.		*					
East Lake Bk.	Danbury	F	Padanaram Res. Bk.	D-½						
Eckert's Bk.	Bethel	F	Wild Cat Bk.	D-1½						
Farmill Riv.	Stratford Shelton Monroe	S	Housatonic Riv.	B-6, C-4	*	*				
Farrar's Bk.	Trumbull	F	Pequonock Riv.		*					
Farrells Pond Bk.	Newtown	F	Pootatuck Riv.	C-2¾						
Five Mile Riv.	Darien Norwalk New Canaan	S	Long Island Sd.	B-4, C-6	*					
Foundry Pond Bk.	Newtown	F	Pootatuck Riv.	D-2	*					
Fred Beers Bk.	Brookfield	F	Housatonic Riv.							
Gelding Bk.	Newtown	F	Housatonic Riv.							

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Geron Bk.	New Fairfield	F	Haviland Hollow Bk.	B-2½						
Giddings Bk.	Sherman	F	Housatonic Riv.	B-2	*					
Gilbert & Bennett's Bk.	Redding	F	Norwalk Riv.	B-1¾						
Godfrey's Bk.	Weston	F	W.B. Saugatuck Riv.	C	*					
Golf Grounds Bk.	Westport	F	Aspetuck Riv.	B-1	*					
Goodwives Riv.	Darien	S	Long Island Sd.							
Gray's Pond Bk.	Stamford	F	Mianus Riv.	D-2½						
Great Bk.	Fairfield	F	Sasco Bk.							
Great Plain Bk.	Danbury	F	Still Riv.	C-3¾	*					
Great Pond Bk.	Ridgefield	F	Norwalk Riv.	D-¼						
Green Farm Bk.	Westport	F	Long Island Sd.	D-1¾						
Green Pond Bk.	Sherman	F	Candlewood Lake	D-5/8						
Greenwich Creek	Greenwich	S	Long Island Sd.	C-5½						
Greenwoods Bk.	Sherman	S	Candlewood Lake		*					
Greenwoods Bk. S.B.	Sherman	F	Greenwoods Bk.	B-1¾						
Guthrie's Pond Bk.	New Canaan	F	Silvermine Bk.	D-¼						
Halfway Riv.	Norwalk Monroe Newtown	S	Lake Zoar	D-5½						
Ham's Bk.	Norwalk	F	Silvermine Bk.	C-2¾						
Harrisons Bk.	Fairfield	F	Aspetuck Riv.	D-¾						
Harvey Pete Bk.	Shelton Monroe	F	Farmill Riv.	C-2	*					
Hattertown Bk.	Newtown	F	Pootatuck Riv.		*					
Haviland Bk.	Stamford	S	Rippowam Riv.	B-4¾			*			
Haviland Hollow Bk.	New Fairfield	S	Croton Riv. New York	B-4¾						
Hawley's Bk.	Weston Easton	F	Saugatuck Riv.	B-2¾	*					
Hazelton's Bk.	Shelton	F	Farmill Riv.	D-¾						
Holt's Ice Pd. Bk.	Stamford	F	Rippowam Riv.	C-½						
Holy Ghosts Fathers Pond Bk.	Norwalk	F	Five Mile Riv.	D-¾						
Hop Bk.	Brookfield	F	Housatonic Riv.							
Horse Tavern Bk.	Bridgeport	F	Rooster Riv.							
Horseneck Bk.	Greenwich	S	Long Island Sd.	C-8						
Housatonic Riv.										
Huckleberry Hills Bk.	Wilton	F	So. Norwalk Reservoir	C-2½						
Hurd's Bk.	Monroe	F	Boy's Halfway R.		*					
Indian Hole Bk.	Shelton	F	Housatonic Riv.	C-1½						
Island Bk.	Bridgeport	F	Poquonock Riv.	D-2						
Ivy Bk.	Shelton	F	Housatonic Riv.	C-¾	*					
Ivy Bk.	Newtown	F	Lake Zoar							
Jess Lewis Bk.	Newtown Monroe	F	Pootatuck Riv.	C-¾	*					
Joyce Bk.	Sherman	F	Candlewood Lake	B-2						
Keatings Pond Bk.	Newtown	F	Curtis Pond Bk.	C-1¾						
Keelers Bk.	Norwalk	F	Five Mile Riv.	C-2¾						
Kellogg's Pond Bk.	Norwalk	F	Norwalk Riv.	D-1						
Kinast Bk.	Danbury	F	Padanaram Res. Bk.							
Knob Crook Bk.	Redding	F	Saugatuck Riv.	D-1¾						
Kohanza Bk.	Danbury	F	Boggs Pond Bk.	C-1¾						
Lee's Pond Bk.	Danbury	F	Spruce Mt. Bk.							

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Lime Kiln Bk.	Bethel	S	Still Riv.		*	*				
Lime Kiln Bk. E.B.	Newtown Bethel	F	Lime Kiln Bk.		*					
Lime Kiln Bk. N.B.	Newtown Bethel	F	Lime Kiln Bk.		*					
Lime Kiln Bk.	Brookfield	F	Still Riv.	C-1½	*					
Little Pond Bk.	Ridgefield	F	Norwalk Riv.	D-¾						
Little Riv.	Redding	S	Saugatuck Riv.			*				
Londos Pond Bk.	Fairfield	F	Rooster Riv.	D-1½						
Long Bk.	Stratford	F	Housatonic Riv.	D-1½						
Mamanasee Bk.	Ridgefield	F	Titicus Riv.	C-¾						
Mann Bk.	Brookfield	F	Candlewood Lake							
Margerie Pond Bk.	Danbury	F	Padanaram Res. Bk.	C-2						
Meads Pond Bk.	Greenwich	F	E.B. Byram Riv.	D-1½						
Means Bk.	Shelton Monroe	S	Farmill Riv.	C-5½	*	*				
Merwin Bk.	Brookfield	F	Hop Bk.							
Mianus Riv.	Stamford Greenwich	R	Long Island Sd.	B-16, C-2			*	*		*
Mianus Riv. E.B.	Stamford	S	Mianus Riv.	B-3, C-2¾			*	*		
Mill Riv.	Fairfield Easton	S	Long Island Sd.	B-12, C-3		*				
Mirey Bk.	Ridgefield Danbury	S	Still Riv.	B-4¾	*					
Moffitt's Bk.	Redding	F	Saugatuck Riv.	B-1½						
Mopus Bk.	Ridgefield	F	Titicus Riv.	B-2, C-0.8	*	*				
Morgan Bk.	Newtown	F	Pootatuck Riv.		*					
Morrissey Bk.	Sherman	S	Housatonic Riv.	B-5¾	*					
Muddy Bk.	Westport	F	Long Island Sd.	D-4						
Mullen's Pond Bk.	Wilton	F	Barrett's Bk.	D-¾						
Nelson Bk.	Shelton Monroe	F	Means Bk.	C-1						
New Pond Bk.	Ridgefield	F	Titicus Riv.							
Nigger Bk.	Stratford Shelton	F	Pumpkin Bk.	C-2	*					
Noroton Riv.	Stamford Darien New Canaan	R	Long Island Sd.	C-8						
Norwalk River	Norwalk Wilton Redding Ridgefield	R	Long Island Sd.	B-13, C-7				*		*
Old Sawmill Bk.	Ridgefield Danbury	F	Still Riv.	C-2						
Ondex Pond Bk.	Monroe	F	Farmill Riv.		*					
Otter Bk.	Newtown	F	Housatonic Riv.	C-2	*					
Padanaram Res. Bk.	Danbury	S	Boggs Pond Bk.	C-3½, D-1						
Parting Bk.	New Canaan Wilton	F	Silvermine Bk.	C-1½						
Parks Pond Bk.	Danbury	F	Still Riv.	D-3						
Patterson Bk.	Easton	F	Rock Raymonds Bk.	D-1½						
Pecks Pond Bk.	Wilton Redding	F	Norwalk Riv.	D-¾						
Pemberwick Bk.	Greenwich	F	Byram Riv.	D-2½						
Penny & Ericson Bk.	Danbury	F	Padanaram Res. Bk.	D-1						

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Poquonock Riv. Main Stream	Bridgeport Trumbull Monroe	R Long Island Sd.	A-6, C-3	*	*		*		
Poquonock Riv. W.B.	Trumbull Monroe	S Poquonock Riv.	B-4½	*					
Perry Bk.	Weston Redding	F Saugatuck Riv.	C-¾						
Pierson's Bk.	Newtown	F Pond Bk.		*					
Pocono Bk.	Newtown	F Pond Bk.		*					
Pond Bk.	Newtown	S Housatonic Riv.	B-5½						
Poorhouse Bk.	Stamford	F Rippowam Riv.	B-3½						
Poorhouse Bk.	New Canaan	F Silvermine Bk.	C-2						
Pootatuck Riv.	Newtown	R Housatonic Riv.	B-5, C-4	*	*				
Pootatuck Riv. N.B.	Newtown	S Pootatuck Riv.	B-4						
Pott's Pond Bk.	New Canaan	F Noroton Riv.	D-2½						
Priton Bk.	Newtown	F Lake Zoar							
Pumping Sta. Bk.	Ridgefield	F Croton R., N.Y.							
Pumpkin Bk.	Stratford	F Housatonic Riv.	B-2, C-1½	*	*				
Putnam Park Bk.	Bethel	F Wolf Pit Bk.		*					
Raven Bk.	Stratford	F Housatonic Riv.	C-1½	*					
Red Mill Bk.	Westport	F Saugatuck Riv.	C-1½	*					
Ridgefield Bk.	Ridgefield	F Norwalk Riv.	D-1½	*					
Rippowam Riv.	Stamford New Canaan	R Long Island Sd.	B-8, C-10½	*		*	*		*
Rock Raymond Bk.	Easton	F Easton Res.	C-2½						
Rockland Pond Bk.	Newtown	F N.B. Pootatuck Riv.	D-¾						
Rockwood Lake Bk.	Greenwich	F Greenwich Creek	C-4						
Rodericks Bk.	Newtown	F Housatonic Riv.	C-1½	*					
Rooster Riv.	Fairfield Bridgeport	F Long Island Sd.	C-8						
Round Pond Bk.	Ridgefield	F So. Pond, N. Y.	B-1½						
Rowell's Bk.	Weston Easton	F Saugatuck Riv.	D-1½						
Russell's Pond Bk.	New Canaan	F Noroton Riv.	C-1½						
Ryder Bk.	Redding	F Saugatuck Riv.							
Sammis Bk.	Monroe	F Halfway Riv.	C-1						
Sandy Hook Bk.	Newtown	F Pootatuck Riv.	C-1½	*					
Sandy Hill Bk.	Newtown	F Halfway Riv.	C-1½	*					
Sasco Bk.	Westport Fairfield	S Long Island Sd.	C-4	*	*				
Saugatuck Riv.	Westport Weston Redding Danbury	R Long Island Sd.	A-22	*	*				
Saugatuck Riv. W.B.	Westport Weston Wilton	S Saugatuck Riv.	B-5½	*	*				
School House Bk.	Weston	F Saugatuck Riv.	C-1½	*					
Scudder Bk.	New Fairfield	F Ball Pond Bk.	C-1½	*					
Shadow Bk.	Ridgefield	F Titucus Riv.	C-1						
Sharps Bk.	Shelton	F Harvey Pete Bk.		*					
Short Wood Bk.	New Fairfield	F Ball Pond Bk.	B-3						
Signor Pond Bk.	Bethel	F Bethel Bk.	D-1						
Silvermine Bk.	Norwalk New Canaan Wilton	S Norwalk Riv.	C-5½						
Simmons Bk.	Monroe	F Halfway Riv.	C-¾	*					
Smith Pond Bk.	Monroe	F Copper Mine Bk.	D-2	*					

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Spectacle Bk.	Wilton	F Comstock Bk.		*					
	Ridgefield								
Springdale Bk.	Stamford	F Noroton Riv.	D-1½						
Spruce Mt. Bk.	Danbury	F Still Riv.	D-2½						
Still Riv.	Danbury	R Housatonic Riv.	C-5, D-16						
	Brookfield								
Stoley's Pond Bk.	Redding	F Umpawaug Pond	D-1½						
Stony Bk.	Darien	F Long Island Sd.	C-5						
Stony Bk.	Westport	F Saugatuck Riv.	B-2, C-1½	*					
	Norwalk								
	Wilton								
Stony Hill Bk.	Danbury	F Lime Kiln Bk.		*					
	Bethel								
Sympaug Bk.	Danbury	F Still Riv.	C-3½						
	Bethel								
Thayer's Bk.	New Canaan	F Parking Bk.	D-½						
	Wilton								
Tiley Pond Bk.	Darien	F Goodwives Riv.	D-1						
Titicus Riv.	Ridgefield	S Croton Riv.	A-5½	*	*				
	and N.Y.	N.Y.							
Tokeneke Bk.	Darien	F Long Island Sd.	D-1½						
Tunnel Bk.	Newtown	F Cavanaugh's Bk.		*					
Umpawaug Pond Bk.	Redding	F Saugatuck Riv.	C-1½						
Uniker Pond Bk.	Stamford	F Rippowam Riv.	D-¼						
Upper White Hills Bk.	Shelton	F Housatonic Riv.	D-1						
Walnut Tree Hill Bk.	Shelton	F Farmill Riv.	D-7/8						
Wells Bk.	Shelton	F Farmill Riv.	C-1½	*					
West Plain Bk.	Newtown	S Pootatuck Riv.	C-4	*					
West Redding Bk.	Redding	F Saugatuck Riv.	B-2½						
	Danbury								
White Hills Com- munity Bk.	Shelton	F Housatonic Riv.	D-1½						
Whitlock Bk.	Monroe	F Halfway Riv.	C-1½	*					
Wicker Bk.	Easton	F Mill River							
Widow Ball Bk.	New Fairfield	F Ball Pond Bk.	C-1	*					
Wild Cat Bk.	Bethel	F Lime Kiln Bk.	B-2½	*	*				
Wilshire Pond Bk.	Greenwich	F Converse Pd. Bk.	C-2						
Willow Bk.	Westport	F Saugatuck Riv.	D-2½						
Wiskoskis Bk.	Shelton	F Farmill Riv.	D-¾	*					
Wolf Pit Bk.	Bethel	F Wild Cat Bk.	C-2	*					
Wood's Pond Bk.	Norwalk	F Betts Pond Bk.	C-¾						

## WINDHAM COUNTY

Abington Bk.	Pomfret	F Mashamoquet Bk.	D-1, C-1	*					
Allaugen Bk.	Killingly	F Five Mile Riv.							
Anderson's Bk.	Brooklyn	F Creamery Bk.		*					
Aspinook Bk.	Putnam	F Five Mile Riv.							
	Killingly								
Backwater Bk.	Thompson	F French Riv.	B-1½	*					
Ballard Bk.	Thompson	F French Riv.	A-1½, D-2 4/5						
Ballymack Bk.	Windham	F Wolfs Pond							
Baker Hollow Bk.	Pomfret	F Blackwell Bk.							
	Brooklyn								
Baptist Bk.	Thompson	F Sunset Hill Bk.	B-¼, D-¾	*					
Bark Meadow Bk.	Pomfret	F Durkee Bk.		*					

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Barley Bk.	Killingly	F Five Mile Riv.							
Barrett Bk.	Pomfret	F Little Riv.	A-1½	*					
	Putnam								
Barrett Ledge Bk.	Pomfret	F White Bk.	A-1½	*					
Bassett Bk.	Ashford	F Mt. Hope Riv.	B-1½	*					
Bate Bk.	Canterbury	F Cory Bk.							
Beaver Bk.	Windham	S Merrick Bk.	B-6½						
	Scotland								
Beaver Dam Bk.	Eastford	F Natchaug Riv.	A-2½	*					
Bebbington Bk.	Ashford	F Mt. Hope Riv.	B-2½	*					
Bennett Bk.	Canterbury	F Kitt Bk.	B-1½			*			
Bigelow Bk.	Ashford	S Natchaug Riv.	A-11	*	*				
	Eastford								
Black Pond Bk.	Woodstock	F Bungee Bk.	D-½						
Blackmore Bk.	Thompson	F Quandick Res.		*					
Blackwell Bk.	Canterbury	S Quinebaug Riv.	B-10½	*	*		*		
	Pomfret								
	Brooklyn								
Blackwood Bk.	Thompson	F Quandick Res.	A-1						
Boston Hollow Rd. Bk.	Ashford	F Bigelow Bk.	C-1½						
Bosworth Bk.	Woodstock	F Bungee Bk.	C-1	*					
	Eastford								
Bowling Alley Bk.	Plainfield	F Moosup Riv.		*					
Bradford Bk.	Woodstock	F Safford Bk.	B-2	*					
Branch Bk.	Eastford	S Bigelow Bk.		*					
Brandy Bk.	Thompson	F Quandick Res.	B-2						
Brown's Bk.	Sterling	F Quaduck Bk.		*					
Buck Bk.	Ashford	F Mt. Hope Riv.							
Bungee Bk.	Woodstock	S Still Riv.	A-9½	*					
	Eastford								
Butts Bk.	Woodstock	F Peake Bk.		*					
Burnham Bk.	Hampton	F Little Riv.							
Bushy Bk.	Thompson	F Quandick Res.							
Buttonball Bk.	Chaplin	F Natchaug Riv.	B-1½						
Cady Bk.	Putnam	F Five Mile Riv.	A-2½						
Carpenter Bk.	Putnam	F Quinebaug Riv.	A-2		*				
Carson Bk.	Sterling	F Bailey Pond							
Cedar Swamp Bk.	Hampton	F Little Riv.							
Cedar Swamp Bk.	Woodstock	F Red Head Meadow Bk.	C-1½	*					
Cedar Swamp Bk.	Sterling	F Moosup Riv.	A-2½	*					
Cemetery Bk.	Pomfret	F Mashamoquet Bk.	A-¾						
Chase Bk.	Killingly	F Whetstone Bk.							
Chestnut Hill Bk.	Windham	F Wolf Pond							
Crissim Bk.	Ashford	F E.B. Mt. Hope Riv.							
Cohasse Bk.	Woodstock	F Quinebaug Riv. (in Mass.)	B-1½						
Colburn Bk.	Canterbury	F Downing Bk.							
Cold Spring Bk.	Brooklyn	F Blackwell Bk.							
	Canterbury								
Cold Bk.	Windham	F Shetucket Riv.		*					
Coman Bk.	Thompson	F French Riv.	B-1½						
Cooney Ledge Bk.	Pomfret	F Barrett Ledge Bk.							
Cory Bk.	Canterbury	S Quinebaug Riv.	B-6½, C-1½						
Cram's Bk.	Eastford	F Still Riv.							
Creamery Bk.	Brooklyn	F Blackwell Bk.	A-2½						

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Crooked Bk.	Sterling	F Moosup Riv.		*					
Cross Bk.	Ashford	F Mt. Hope Riv.	A-3½						
Crystal Bk.	Eastford	F Still Riv.	D-¾						
Ctallup Bk.	Plainfield	F Ekonk Bk.							
Culver Bk.	Putnam	F Quinebaug Riv.	B-2½	*					
Cutlers Bk.	Putnam	F Five Mile Riv.	C-1½						
Darby Bk.	Canterbury	F Kitt Bk.					*		
Darling Pond Bk.	Chaplin	F Natchaug Riv.	C-½	*					
Davis Bk.	Plainfield	F Ekonk Bk.							
Davis Bk.	Killingly	F Five Mile Riv.							
Day Bk.	Killingly	F Five Mile Riv.							
Day Bk.	Pomfret	F Mashamoquet Bk.	C-2½	*					
Dayville Bk.	Killingly	F Five Mile Riv.							
Deane Bk.	Canterbury	F Peck Bk.							
Dixon Bk.	Sterling	F Quaduck Bk.		*					
Downing Bk.	Canterbury	F Little Riv.							
Durkee Bk.	Pomfret	F Quinebaug Riv.	A-3½						
Eaton Bk.	Windham	F Shetucket Riv.							
Eddy Bk.	Woodstock	F Muddy Bk.		*					
English Neighbor- hood Bk.	Woodstock	F Muddy Bk.	B-2½, C-1	*					
Ekonk Bk.	Plainfield	F Moosup Riv.	A-6	*					
Elliott Bk.	Thompson	F Ballard Bk.							
Eno Bk.	Ashford	F Fenton Riv.	D-1½						
Evans Bk.	Plainfield	F Horse Bk.							
Fall Bk.	Killingly	F Quinebaug Riv.	A-3						
Finns Bk.	Canterbury	F Quinebaug Riv.							
Five Mile Bk.	Thompson	F Quandick Res.	A-4½						
Five Mile Riv.	Putnam	R Quinebaug Riv.	C-12½	*			*		
	Killingly		(Poll. 3¼)						
Floyd Brown Bk.	Thompson	F Quandick Res.	C-1½				*		
French Riv.	Thompson	R Quinebaug Riv.	D-6¾						
			(Poll. 6¾)						
Fuller Bk.	Hampton	F Little Riv.		*					
Gardner Bk.	Ashford	F Mt. Hope Riv.	B-1½						
Goodwin Bk.	Chaplin	F Natchaug Riv.							
	Hampton								
Goodyear Bk.	Killingly	F Quinebaug Riv.							
Gravelly Bk.	Woodstock	F Muddy Bk.	D-2½	*					
Green Hollow Bk.	Plainfield	F Moosup Riv.	B-2						
Hall's Bk.	Eastford	F Still Riv.	A-1½						
Hall's Bk.	Killingly	F Snake Meadow Bk.							
Halt Hill Bk.	Killingly	F Fall Bk.							
Hammond Bk.	Ashford	F E.B. Mt. Hope Riv.	C-1						
Hampton Sta. Bk.	Hampton	F Little Riv.		*					
Handle Bk.	Killingly	F Whetstone Bk.							
Harris Bk.	Pomfret	F Blackwell's Bk.	B-1½						
Havens Ledge Bk.	Eastford	F Still Riv.	B-2	*					
Havey Bk.	Plainfield	F Quinebaug Riv.							
Herridean Bk.	Woodstock	F Chamberlain Pd.	A-1½	*					
Horse Bk.	Plainfield	F Mill Bk.	B-1½	*					
			(Poll. 1¼)						
Humes Bk.	Hampton	F Little Riv.							
Indian Hollow Bk.	Windham	F Shetucket Riv.	B-3½, D-1	*					
James Bk.	Killingly	F Quandock Bk.							
Janson Bk.	Thompson	F Five Mile Riv.					*		
Jim Case Bk.	Killingly	F Five Mile Riv.	B-¾						

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
John Bk.	Canterbury	F Little Riv.	B-3/4						
Johnson Bk.	Canterbury	F Quinebaug Riv.							
Johnston Bk.	Woodstock	F Muddy Bk.							
Jordan Bk.	Thompson	F Quinebaug Riv.		*					
Keech Bk.	Putnam	F Mary Brown Bk.	A-3 3/4						
Kelly Bk.	Killingly	F Five Mile Riv.	B-1 1/4			*			
Kennedy Bk.	Plainfield	F Evans Bk.	A-2 1/4 (Poll. 3/4)						
Kidder Bk.	Ashford	F Fenton Riv.	C-1 1/4						
Kinnie Bk.	Canterbury	F Cory Bk.							
Kitt Bk.	Canterbury	S Quinebaug Riv.	A-7 1/2	*	*			*	*
Knowlton Bk.	Ashford	S Mt. Hope Riv.	C-6	*					
Knowlton Bk.	Thompson	F Long Branch Bk.							
Knowlton Pond Bk.	Ashford	F Mt. Hope Riv.	C-1 1/2						
Labelle Bk.	Killingly	F Five Mile Riv.	B-1 3/4			*			
Lake Street Bk.	Plainfield	F Moosup Riv.							
Larrabe Bk.	Windham	F Shetucket Riv.				*			
Lathrop Bk.	Plainfield	F Mill Bk.	A-3 1/4	*					
Lead Mine Bk.	Ashford	F Bigelow Bk.	C-1 1/4						
Lippitts Bk.	Putnam	F Little Dam Tavern Bk.	D-1 3/4						
Little Riv.	Putnam	S Quinebaug Riv.		*					
Little Riv.	Hampton	R Shetucket Riv.	A-16 1/2						
	Scotland		(Poll. 4)	*	*				
	Canterbury								
Little Riv. W.B.	Hampton	F Little Riv.							
Little Dam Tav. Bk.	Putnam	F Quinebaug Riv.	B-3 3/4	*					
Little Mt. Bk.	Thompson	F Ballard Bk.							
Long Bk.	Brooklyn	F Quinebaug Riv.	A-2	*					
Long Branch Bk.	Thompson	F French Riv.	B-3 1/4, C-1	*					
Long Pond Bk.	Thompson	F Five Mile Bk.							
Lost Pond Bk.	Union	F Still Riv.	C-1 1/4						
Lowry Bk.	Ashford	F Knowlton Bk.	D-1 3/4						
Lyon Bk.	Eastford	F Mashamoquet B.	A-3 3/4	*					
	Pomfret								
Mansur Bk.	Chaplin	F Natchaug Riv.	C-2						
Marcey Bk.	Woodstock	F Lebanon Bk. (Massachusetts)	B-3 1/4	*					
Mary Brown Bk.	Putnam	F Five Mile Riv.	C-4 1/2 (Poll. 1/2)						
Mashamoquet Bk.	Pomfret	S Quinebaug Riv.	A-3 1/4, C-3	*					
	Killingly								
Mashentuck Bk.	Killingly	F Whetstone Bk.	B-2 1/2	*					
Masons Bk.	Brooklyn	F Blackwell Bk.	B-1 1/4						
Merrick Bk.	Scotland	S Spencer Merrick Bk.	B-8 3/4						
	Hampton								
Mill Bk.	Woodstock	F Woodstock Pond	C-3 3/4						
Mill Bk.	Plainfield	S Shetucket Riv.	A-3 1/2, B-3 1/2	*	*				
Miller Bk.	Plainfield	F Rogers Lake							
	Canterbury								
Monty Bk.	Scotland	F Little Riv.	A-1						
	Canterbury								
Moritz Bk.	Ashford	F Knowlton Bk.		*					
Moss Bk.	Woodstock	F Muddy Bk.							
Moosup Riv.	Sterling	R Quinebaug Riv.	B-6, C-5 1/2, D-11 1/4			*			
	Plainfield								
Mt. Hope Riv.	Ashford	S Natchaug Riv.	C-16, B-4 3/4	*	*				
Mt. Hope Riv. E.B.	Ashford	S Mt. Hope Riv.	B-3 3/4	*					
Muddy Bk.	Woodstock	S Woodstock Pond	A-3 1/2, B-2 1/4, D-6 1/2	*	*				

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Mud Hole Bk.	Canterbury	F Kitt Bk.							
Munson Bk.	Thompson	F Five Mile Riv.	C to D-1½			*			
Murphy Bk.	Hampton	F Bigelow Bk.		*					
Natchaug Riv.	Eastford	R Willimantic Riv.	A-14		*		*		*
	Chaplin								
	Windham								
Nigger Bk.	Canterbury	F Little Riv.							
Nightingale Bk.	Pomfret	F Mashamoquet Bk.		*					
Noon Bk.	Canterbury	F Quinebaug Riv.							
Noone Bk.	Sterling	F Wood Riv.							
North Potter Bk.	Sterling	F Quaduck		*					
Obwebetuck Bk.	Windham	F Shetucket Riv.	C-1½						
Pearl Bk.	Hampton	F Little Riv.							
Peake Bk.	Woodstock	F Little Riv.	A-2½						
	Pomfret								
Peck Bk.	Canterbury	F Little Riv.	B-2½						
Peckham Bk.	Woodstock	F Muddy Bk.		*					
Perry Bk.	Putnam	F Culver Bk.							
Phillips Bk.	Plainfield	F Sugar Bk.							
Pine Bk.	Brooklyn	F Quinebaug Riv.	B-2	*					
Poor Farm Bk.	Thompson	F Quandick Res.	B-1½						
Portertown Bk.	Sterling	F Wood Riv.							
Potash Bk.	Windham	F Shetucket Riv.	A-3	*					
Potter Bk.	Windham	F Indian Hollow Bk.							
Potter's Pond Bk.	Woodstock	F Bungee Bk.	C-2						
Prospect Hill Bk.	Windham	F Obwebetuck Bk.	C-2½						
Quaduck Bk.	Sterling	S Moosup Riv.		*	*				
	Killingly								
Quaker Meetinghouse Bk.	Pomfret	F Day Bk.	C-3½	*					
Quaduck Bk.	Killingly	F Quinebaug Riv.							
Quinebaug Bk.	Killingly	F Quinebaug Pond							
Quinebaug Riv.	Killingly	R Shetucket Riv.	D-46, C-3½ (Poll. 49¼)				*		*
	Thompson								
	Putnam								
	Brooklyn								
	Canterbury								
	Plainfield								
Ragged Hill Bk.	Pomfret	F Nightingale Bk.							
Rainville Bk.	Brooklyn	F Quinebaug Riv.		*					
Ravler Bk.	Sterling	F Quaduck Bk.							
Read Bk.	Ashford	F E.B. Mt. Hope Riv.							
Red Hd. Meadow B.	Woodstock	F Bungee Bk.	B-1½	*					
Reed Bk.	Eastford	F Natchaug Riv.	D-¾	*					
	Chaplin								
Rhodes Bk.	Thompson	F Janson Bk.	A-2	*					
River Road Bk.	Scotland	F Parker Bk.							
	Hampton								
Robbins Bk.	Thompson	F Quandick Res.	C-3	*					
Rocky Bk.	Thompson	F Five Mile Bk.							
Ross Bk.	Thompson	F Ream's Pond							
Rounds Bk.	Sterling	F Quaduck Bk.							
Sabin Bk.	Killingly	F Five Mile Riv.							
Saffird Bk.	Canterbury	F Quinebaug Riv.							
Safford Bk.	Woodstock	F Bungee Bk.	B-2						
Sandy Bk.	Brooklyn	F Blackwell's Bk.	A-2	*					
Sap Tree Run Bk.	Pomfret	F Mashamoquet Bk.		*					
Shady Oak School House Bk.	Killingly	F Cady Bk.							

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingering	Brook Adults	Brown Fingering	Brown Adults	Rainbow Fingering	Rainbow Adults
Sherman Bk.	Sterling	F	Cedar Swamp Bk.							
Shetucket Riv.	Windham	R	Thames Riv.				*	*		
Shoor Bk.	Plainfield	F	Sugar Bk.							
Shumway Bk.	Thompson	F	Quinebaug Riv.	B-2	*					
Slate Bk.	Killingly	F	Mashentuck Bk.	B-2½						
Slovik Bk.	Eastford	F	Natchaug Riv.	C-1						
Smith Bk.	Canterbury	F	Little Riv.	B-¾						
Snake Meadow Bk.	Plainfield	S	Moosup Riv.	A-6		*				*
South Porter Bk.	Killingly	F	Quaduck Bk.							
Spaulding Bk.	Sterling	F	Muddy Bk.	D-3	*					
Spencer Pond Bk.	Woodstock	F	Shetucket Riv.							
Spence Merrick Bk.	Windham	F	Shetucket Riv.							
Squaw Hollow Bk.	Scotland	F	Shetucket Riv.							
Starkett Bk.	Ashford	F	Knowlton Bk.	A-1½						
Stearling Hill Bk.	Killingly	F	Mashentuck Bk.							
Still Riv.	Plainfield	F	Ekonk Bk.							
Stones Bk.	Woodstock	S	Natchaug Riv.	C-7½	*					
Stone House Bk.	Eastford	F	Bigelow Bk.							
Stone House B. E. B.	Chaplin	F	Natchaug Riv.	A-5						
Stony Bk.	Chaplin	F	Stone House Bk.	C-1½						
Stoud Bk.	Brooklyn	F	Blackwell's Bk.	A-3						
Sugar Bk.	Thompson	F	Sunset Hill Bk.	A-2½	*					
Sunset Hill Bk.	Plainfield	F	Quinebaug Riv.	B-2-4/5			*			
Tanner Bk.	Thompson	F	French Riv.	A-2½						
Tatnic Bk.	Brooklyn	F	Blackwell Bk.	A-1½						
Taylor Bk.	Brooklyn	F	Blackwell Bk.	A-3 (Poll. 3)						
Tennant Bk.	Woodstock	F	Mill Riv.		*					
Thompson Hill Bk.	Sterling	F	Snake Meadow Bk.							
Tillinghast Bk.	Plainfield	F	Little Riv.	A-1½						
Tinkerville Bk.	Woodstock	F	Quaduck Bk.							
Titus Bk.	Killingly	F	Fenton Riv.	C-2½						
Torry Bk.	Ashford	F	Quaduck Bk.							
Turner Bk.	Sterling	F	Five Mile Riv.	A-1	*					
Tyler Bk.	Putnam	F	Natchaug Riv.	B-1½	*					
Underground Bk.	Chaplin	F	Moosup Riv.							
Vaughn Bk.	Plainfield	F	Quinebaug Riv.							
Wade Bk.	Killingly	F	Moosup Riv.							
Waldo Bk.	Sterling	F	Blackwell Bk.	B-3½	*					
Warren Bk.	Hampton	F	Blackwell Bk.							
Weaver Bk.	Pomfret	F	Shetucket Riv.							
Wheatons Bk.	Scotland	F	Whetstone Bk.							
Whetstone Bk.	Killingly	F	Mill Bk.	C-3	*					
White Bk.	Killingly	F	Little Riv.	C-2½	*					
Wilcox Bk.	Putnam	F	Five Mile Riv.	D-5½ (Poll. 5½)						
Williamsville Bk.	Thompson	F	Quinebaug Riv.	B-2½, C-1½						
Willimantic Riv.	Killingly	F	Snake Meadow Bk.							
Wolf Den Bk.	Plainfield	F	Horse Bk.							
Wood Riv.	Killingly	F	Mashamoquet Bk.							
Wright Bk.	Windham	R	Shetucket Riv.	B-12, C-9½						
Zajicek Bk.	Pomfret	F	Mashamoquet B.	A-2	*	*				
	Sterling	F	Rhode Island							
	Ashford	F	Mt. Hope Riv.							
	Ashford	F	Knowlton Bk.	C-½, D-½						

## LITCHFIELD COUNTY

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Allen Bk.	Woodbury	F	Weekeepeemee Riv.		*					
	Bethlehem									
Amesville Bk.	Salisbury	F	Housatonic Riv.	C-1						
Aspetuck Riv.	New Milford	R	Housatonic Riv.	D- $\frac{1}{2}$						
Aspetuck Riv. E.B.	New Milford	S	Aspetuck Riv.	B-8		*	*	*		
	Washington									
Aspetuck Riv. W.B.	New Milford	S	Aspetuck Riv.	B-11 $\frac{1}{2}$	*	*	*	*		
	Kent									
Austins Bk.	Kent	F	Housatonic Riv.	B-2, C-3	*					
	New Milford									
Bakersville Bk.	New Hartford	F	Nepaug Riv.		*					
	Torrington									
Baldwin Bk.	New Milford	F	E.B. Aspetuck Riv.		*					
Ball Bk.	Salisbury	F	Spruce Swamp B.							
Bantam Riv. outlet of Bantam Lake	Litchfield	S	Shepaug Riv.	D-6	*		*	*		
	Washington									
	Morris									
Bantam Riv., trib. to Bantam Lake	Litchfield	S	Bantam Lake	A-6	*	*	*			
	Torrington									
	Goshen									
Bantam Riv. W.B.	Goshen	S	Bantam Riv.	A-7 $\frac{1}{2}$	*	*				
	Litchfield									
Beach Hill Bk.	Colebrook	F	W.B. Farm. Riv.							
Bearsley Pond Bk.	Sharon	F	Mudge Pond Bk.	C-2						
Beaver Bk.	Barkhamsted	F	Compensating Res.	A-5 $\frac{1}{2}$						
	Hartland									
Beaver Pond Bk.	Morris	F	Sod Dam Res.	C-3	*					
Beckley Pond Bk.	Norfolk	F	Mad Riv.	B-2 $\frac{1}{2}$	*					
Beckwith Bk.	New Hartford	F	Nepaug Riv.		*					
Bee Bk.	Washington	F	Shepaug Riv.	A-2, B-3 $\frac{1}{2}$	*		*			
	Warren									
Benedick Pond Bk.	Norfolk	F	Doolittle Pd. Bk.	D- $\frac{1}{2}$						
Bingham Pond Bk.	Salisbury	F	Wachocostinook Creek	D-1						
Blackberry Riv.	No. Canaan	S	Housatonic Riv.	A-10	*	*			*	*
	Norfolk									
Bog Meadow Bk.	Sharon	F	Mill Bk.	C-1 $\frac{1}{2}$						
Bradford Bk.	Cornwall	F	Hollenbeck Riv.	D-1 $\frac{1}{2}$						
	Goshen									
Branch Bk.	Thomaston	S	Naugatuck Riv.				*	*		
	Watertown									
Brown Bk.	Canaan	F	Hollenbeck Riv.	A-3						
	Norfolk									
Brown Bk. N.B.	Canaan	F	Brown Bk.							
Bull Mt. Bk.	Kent	F	Nonenshenuk Bk.	C-2	*					
	New Milford									
Burr Pond Bk.	Torrington	F	Still Riv.	B- $\frac{5}{8}$						
Burton Bk.	Salisbury	F	Factory Bk.	D	*	*				
Butternut Bk.	Litchfield	F	Bantam Riv.	B-5	*	*				
Butternut Bk. W.B.	Litchfield	F	Butternut Bk.	B-3 $\frac{1}{2}$	*					
Camp Pond Bk.	Norfolk	F	Blackberry Riv.	B-2					*	
Caramel Hill Bk.	Bethlehem	F	Weekeepeemee R.	C-5	*					
	Woodbury									
Corsh Bk.	Sharon	F	Housatonic Riv.	A-4 $\frac{1}{2}$	*		*			

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Catlin Bk.	Harwinton	F	Leadmine Bk.							
Cider Mill Bk.	Bridgewater	F	Housatonic Riv.	C-3½	*					
Clark Bk.	Woodbury	F	Nonewaug Riv.		*					
Clapboard Oak Bk.	Bridgewater	F	Housatonic Riv.	B-2	*					
Cobble Bk.	Kent	F	Housatonic Riv.	B-2, C-1	*		*			
Colebrook Bk.	Colebrook	F	Indian Meadow Bk.	B-3½	*					
Cranberry Pond Bk.	Morris	F	Bantam Riv.	D-½						
	Litchfield									
Cressy Bk.	Canaan	F	Wangum Lake Bk.	D						
	Norfolk									
Crissey Pond Bk.	Norfolk	F	Toby Pond							
Denman Bk.	New Milford	F	West Aspetuck	R.A-2¾						
Doolittle Pond Bk.	Norfolk	F	Sandy Bk.	B-2¾						
	Colebrook									
Dunning Bk.	Norfolk	F	Blackberry Riv.		*					
East Meadow Bk.	Bethlehem	F	Nonewaug Riv.	C-4						
	Woodbury									
East Morris Bk.	Morris	F	Wigwam Res.	C-3½	*					
	Watertown									
Echo Lake Bk.	Watertown	F	Steel Bk.	C-¾						
Factory Bk.	Salisbury	F	Salmon Creek							
Falls Hill Bk.	Salisbury	F	Housatonic Riv.	C-1						
Farmington Riv.	New Hartford	R	Connecticut Riv.	C-40		*		*		
Farmington R. E.B.	Barkhamsted	R	Farmington Riv.	A-12½	*	*		*		
Farmington R. W.B.	Barkhamsted	R	Farmington Riv.	B-6, C-7½	*	*	*	*		
	Colebrook									
Fenn Bk.	Watertown	F	Wigwam Res.	C-2	*					
Fox Bk.	Goshen	F	Bantam Riv.	B-3	*					
Fox Bk.	Winchester	F	E.B. Naugatuck Riv.	D-1¼						
Frank Atwood Bk.	Woodbury	F	Nonewaug Riv.		*					
Furnace Bk.	Cornwall	F	Housatonic Riv.	A-5½						
Fuller Mt. Bk.	Kent	F	Housatonic Riv.		*					
Galpins Bk.	Woodbury	F	Nonewaug Riv.							
Garnett Bk.	Salisbury	F	Spruce Swamp Bk.							
Giddings Bk.	New Milford	F	Housatonic Riv.	B-2	*					
	Sherman									
Good Hill Bk.	Woodbury	F	Hesseky Bk.	C-2½						
Graystone Bk.	Plymouth	F	Naugatuck Riv.							
Great Bk.	New Milford	F	Housatonic Riv.	D	*	*				
Gulf Stream	Litchfield	F	Naugatuck Riv.	C	*					
	Torrington									
Guna Bk.	Sharon	F	Housatonic Riv.	A-3¾						
Gunn Bk.	Cornwall	F	Housatonic Riv.	C-2½	*		*			
Hall Meadow Bk.	Norfolk	S	W.B. Naugatuck Riv.	A-8	*	*				
	Goshen									
	Torrington									
	Winchester									
Hanestone Bk.	Litchfield	F	Northfield Cut- lery Co. Pond	C						
Hancock Bk.	Plymouth	S	Naugatuck Riv.	B-8¾	*	*				
Hart Bk.	Goshen	F	W.B. Naugatuck Riv.	B-3½						
	Torrington									
	Winchester									
Harvey Bk.	Woodbury	F	Nonewaug Riv.		*					
Hatchery Bk.	Winchester	F	Highland Lake							
Hesseky Bk.	Woodbury	F	Pomperaug Riv.	B-2½						
Hill Bk.	Litchfield	F	Bantam Riv.		*					



Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Mohawk Bk.	Cornwall	F	E.B. Shepaug R.	B-1						
	Goshen									
Moose Horn Bk.	Litchfield	F	Wigwam Res.		*					
	Thomaston									
Moose Horn Bk.	Roxbury	F	Shepaug Riv.	B-2	*		*			
Morey Bk.	Sharon, Kent	F	Housatonic Riv.		*					
Morgan Bk.	Barkhamsted	F	Greenwood Pd.	C-2						
Morrissey Bk.	New Milford	S	Housatonic Riv.	B-5½	*					
Mt. Tom Pond Bk.	Litchfield	F	Hill Bk.		*					
Mudge Pond Bk.	Sharon	F	Indian Pond Ck.	D	*					
Nadine Hollow Bk.	Kent	F	Macedonia Bk.	A-2						
Naugatuck Riv.	Watertown	R	Housatonic Riv.	D-34						
	Thomaston									
	Harwinton									
	Litchfield									
	Torrington									
Naugatuck Riv. E.B.	Winchester	S	Naugatuck Riv.	B-6½	*	*				
	Torrington									
Naugatuck R. W.B.	Torrington	S	Naugatuck Riv.	B-2½		*		*		*
Nepaug Riv.	New Hartford	S	Nepaug Res.	A-9	*	*				
	Torrington									
	Winchester									
Nickel Mine Bk.	Goshen	F	W.B. Naugatuck Riv.	D-5	*					
Nonewaugh Riv.	Bethlehem	S	Pomperaug Riv.	B-8						
	Woodbury									
	Watertown									
Nonewaugh Ext. Bk.	Woodbury	F	Nonewaugh Riv.		*					
Norfolk Bk.	Norfolk	F	Blackberry Riv.	B-2	*					
North Bk.	New Hartford	F	Nepaug Riv.		*					
Northfield Bk.	Thomaston	F	Naugatuck Riv.	C-3¾						
	Litchfield									
North Flanders Bk.	Kent	F	Housatonic Riv.		*					
No. Colebrook Bk.	Colebrook	F	Sandy Bk.	B-2						
North Kent Bk.	Kent	F	Housatonic Riv.		*		*			
North Nepaug Bk.	New Hartford	F	Nepaug Riv.		*					
Nylbs Bk.	Morris	F	Bantam Riv.		*					
O'Kane Bk.	Cornwall	F	Hollenbeck Riv.	A-3						
	Goshen									
Ore Hill Bk.	Salisbury	F	Long Pond	D						
Pequabuck Riv.	Plymouth	S	Farmington Riv.	D-16						
Perry Falls Bk.	Cornwall	F	Housatonic Riv.		*					
Pettee Bk.	Salisbury	F	Factory Bk.							
Picket Bk.	Harwinton	F	Naugatuck Riv.	C-1¼						
Pierce Bk.	Roxbury	F	Shepaug Riv.		*					
Pine Swamp Bk.	Sharon	F	Housatonic Riv.	B-1	*					
Pitch Bk.	Harwinton	F	Naugatuck Riv.							
Pitch Bk.	Litchfield	F	Sod Dam Res.		*					
	Morris									
Poland Riv.	Harwinton	F	Pequabuck Riv.	B-4½						
	Plymouth									
Pomperaug Riv.	Woodbury	R	Housatonic Riv.	C-12	*	*		*		*
Potter Bk.	Cornwall	F	Housatonic Riv.	B-1½	*		*			
Powder Bk.	Harwinton	F	Poland Riv.	C-2						
Purgatory Bk.	Watertown	F	Branch Bk.	C-2						
Reicheback Bk.	Woodbury	F	Nonewaugh Riv.		*					
Ricker Bk.	Woodbury	F	Nonewaugh Riv.							
Riga Bk.	Salisbury	F	Salmon Bk.	A-2¾		*				
Riley Swamp Bk.	Winchester	F	Park Pond	C-2½	*					

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Roaring Bk.	Barkhamsted	F	E.B. Farming R..	B-2½						
Rock Bk.	Harwinton	F	Leadmine Bk.	B-5						
	New Hartford									
Roxbury Bk.	Roxbury	F	Shepaug Riv.	C-2½	*		*			
Sages Ravine Bk.	Salisbury	F	Schenob Bk.	C-1		*				
Salmon Bk. W.B.	Hartland	S	Salmon Bk.	A-10½		*				
	Barkhamsted									
Salmon Creek	Salisbury	S	Housatonic Riv.	B-7						
Sandy Bk.	Norfolk	S	Farmington Riv.			*				
	Colebrook									
Sawmill Bk.	Woodbury	F	Nonewaug Riv.		*					
Schenob Bk.	Salisbury	F	Housatonic Riv. (Mass.)							
Second Hill Bk.	Roxbury	F	Shepaug Riv.	D-2½	*					
	Bridgewater									
Seeley Bk.	Litchfield	F	Sod Dam Res.	B-3	*					
Shad Road Bk.	Watertown	F	Branch Bk.		*					
Sheer Bk.	Morris	F	Bantam Riv.		*					
	Washington									
Shepaug Riv.	Cornwall	R	Housatonic Riv.	A-24, C-3	*	*		*		*
	Warren									
	Washington									
	Roxbury									
	Litchfield									
Shepaug Riv. E.B.	Litchfield	S	Shepaug Riv.	A-4½	*					
Shogum Bk.	Kent	F	Housatonic Riv.	C-1½	*					
Slocum Bk.	Colebrook	F	W.B. Farming, R.	B-1						
Smith Pond Bk.	Watertown	F	Steel Bk.	C-1½						
South Bk.	Woodbury	F	Pomperaug Riv.	D						
Smith Mt. Bk.	New Hartford	F	Farmington Riv.							
South Nepaug Bk.	New Hartford	F	Nepaug Riv.		*					
Spaulding Bk.	Norfolk	F	Blackberry Riv.		*					
Sprain Bk.	Washington	S	Weekeepeemee R.	B-6						
	Woodbury									
Spruce Bk.	Litchfield	F	Naugatuck Riv.	A-3½	*					
Spruce Bk.	New Hartford	F	Nepaug Riv.		*					
Spruce Swamp Bk.	Salisbury	F	Salmon Creek	B-4	*	*				
Squabble Bk.	No. Canaan	F	Konkapot Bk.	D						
Squash Hollow Bk.	New Milford	F	Housatonic Riv.							
Steele Bk.	Watertown	S	Naugatuck Riv.	D-7	*					
	Waterbury									
Still Riv.	New Milford	R	Housatonic Riv.	C-5, D-16						
Still Riv.	Colebrook	S	Sandy Bk.	D-11						
	Winchester									
	Torrington									
Storehouse Bk.	Barkhamsted	F	Compensating Res.							
Sucker Bk.	Winchester	F	Highland Lake	B-1½		*				
Thayer Bk.	Kent	F	Housatonic Riv.	D						
Toby Pond Bk.	Norfolk	F	Blackberry Riv.	A-1½	*					
Todd Hollow Bk.	Plymouth	F	Hancock Bk.	A-3½						
Torrington Bk.	Torrington	F	Bakersville Bk.	B-3	*					
	New Hartford									
Towner Hill Bk.	New Milford	F	Housatonic Riv.	D	*					
Town Farm Bk.	New Milford	F	Housatonic Riv.	D	*					
	Bridgewater									
Transylvania Bk.	Roxbury	F	Pomperaug Riv.	A-5						
	Woodbury									
Turkey Bk.	Watertown	F	Steele Bk.	B-2½						
Turrill Bk.	Roxbury	F	Shebaug Riv.		*					

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Tyler Pond Bk.	Goshen	F	Tyler Pond	C-5/8						
Viningram Bk.	Washington	F	Shepaug Riv.	A-2 3/4	*		*			
Walker Bk.	New Milford	F	Shepaug Riv.	A-3 1/2	*	*				
Wangam Lake Bk.	Canaan	S	Hollenbeck Riv.	A-2, B-2						
Wattles Pond Bk.	Watertown	F	Steel Bk.	D-2 1/2						
Weekeepeemee Riv.	Bethlehem Woodbury	S	Pomperaug Riv.	A-8		*				
West Norfolk Bk.	Norfolk	F	Blackberry Riv.		*					
West Side Pond Bk.	Goshen	F	West Side Pond	A-2	*					
Whist & Drake Pond Bk.	Torrington	F	W.B. Naugatuck Riv.	C-1 1/2						
White Hollow Bk.	Salisbury Sharon	F	Salmon Creek	D						
Whiting Riv.	No. Canaan Norfolk	F	Blackberry Riv.	A-3			*			
Whittlesey's Bk.	Morris	F	Bantam Lake							
Wickwire Bk.	Canaan Cornwall	F	Housatonic Riv.	D	*					
Wilson Pond Bk.	Harwinton	F	Rock Bk.	D-3/4						
Wood Creek	Bethlehem	F	Weekeepeemee R.	A-2 3/4						
Wood Creek	Norfolk	F	Blackberry Riv.	C-2						

## MIDDLESEX COUNTY

Asmunds Bk.	Durham	F	Sawmill Bk.		*	*				
Axelson Bk.	E. Hampton Haddam	F	Connecticut Riv.							
Back Riv.	Old Saybrook	F	Long Island Sd.							
Balls Bk.	Durham	F	Allyn's Mill Pond		*	*				
Beaver Bk.	Haddam	F	Mill Riv.	C-2				*		
Bible Rock Bk.	Middletown Haddam	F	Connecticut Riv.		*	*				
Birch Mill Bk.	Durham	F	Fowler Bk.		*					
Boones Bk.	Westbrook	F	Patchogue Riv.		*	*				
Buck Bk.	Portland	F	Portland Res.	C-1 1/2						
Buell Bk.	E. Haddam	F	Moodus Riv.							
Bunker Hill Bk.	Killingworth	F	Hammonasset Riv.	B-2 1/2						
Burdicks Bk.	Westbrook	F	Patchogue Riv.		*					
Burnhams Bk.	E. Haddam	F	Eight Mile Riv.							
Burr Bk.	Chester	F	Cedar Lake		*					
Bushy Bk.	Essex	F	Falls Riv.							
Candlewood Hill Bk.	Haddam	S	Ponset Bk.	B-3, C-2	*	*				
Carr Bk.	Portland	F	Connecticut Riv.	B-2						
Cattle Lot Bk.	E. Hampton	F	Dickinson Creek	C-3	*					
Chalker Bk.	Durham	F	Cream Pot Bk.							
Chatfield Hollow Bk.	Killingworth	S	Hammonasset Riv.	B-4	*	*				
Chestnut Bk.	Cromwell	F	Mattabasset R.	D-1 1/2						
Clark Creek	Haddam	F	Connecticut Riv.	D-2 1/2	*	*				
Coginchaug Riv.	Middletown Middlefield Durham	S	Mattabasset R.	B-14				*		
Cold Bk.	E. Hampton	F	Roaring Bk.							
Cold Spring Bk.	Westbrook Old Saybrook	F	Long Island Sd.							
Connecticut Riv.		R	Long Island Sd.							

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Cox Brook	Portland	F Cox's Pond	B-2	*					
Cranberry Meadow Bk.	E. Haddam	F Eight Mile Riv.							
Cream Pot Bk.	Durham	F Coginchaug Riv.							
Deep Hollow Bk.	E. Haddam	F Chapman's Pond							
Deep Riv.	Chester	S Connecticut Riv.	B-3, C-2	*	*				
	Saybrook								
Dividend Bk.	Cromwell	F Connecticut Riv.							
Eight Mile Riv.	E. Haddam	S Connecticut Riv.	B-9			*	*		
Eight Mile Riv. NW. B.	E. Haddam	F W.B. Eight Mile Riv.	A-4						
Eight Mile R. W.B.	E. Haddam	F Eight Mile Riv.	C-3						
Elbow Bk.	E. Hampton	F Salmon Riv.		*					
Ellen Doyle Bk.	Middlefield	F Coginchaug Riv.	C-1	*					
Fall Bk.	Middletown	F Mattabassett R.	C-4½	*					
Falls Riv.	Saybrook	F Connecticut Riv.	C						
	Essex								
	Westbrook								
Fawn Hill Bk.	E. Hampton	F Dickinson Creek							
Fishing Bk.	Old Saybrook	F Oyster Riv.	D-1		*				
Flat Bk.	E. Hampton	F Salmon Riv.		*					
Fowler Bk.	Durham	F Allyn's Mill Pond		*	*				
Gilberts Bk.	Middletown	F Sumner Bk.		*					
Great Bk.	Haddam	F Pattaconk Bk.	C-4	*	*				
	Chester								
Great Hill Bk.	Portland	F Connecticut Riv.	C-2						
	East Hampton								
Green Riv.	E. Hampton	F Pine Bk.	B-1	*	*				
Hale Bk.	E. Hampton	F Pocotopaug Lake							
Hales Bk.	Portland	F Connecticut Riv.	B-3½	*					
Hammonasset Riv.	Killingworth	R Long Island Sd.	B-13						
	Clinton								
Hans Bk.	Middlefield	F Coginchaug Riv.	C-1½	*					
Harris Bk.	Middletown	F Sumner Bk.		*					
Heft Bk.	Haddam	F Menunketesuck Riv.		*					
	Killingworth								
Hemlock Bk.	E. Haddam	F Roaring Bk.							
Hersig Bk.	Durham	F Allyn's Mill Pond		*	*				
Highland Bk.	Middletown	F Saw Mill Pond							
Hurd Bk.	Saybrook	F Wood Bk.		*					
Indian Riv.	Killingworth	S Long Island Sd.	B-3, C-2	*	*				
	Clinton								
Lampes Bk.	Chester	F Burr Bk.		*					
Laurel Bk.	Middletown	F Coginchaug Riv.	D-2	*					
	Middlefield								
Long Hill Bk.	Middletown	F Sumner Bk.	C-3	*					
Lyman Meadow Bk.	Middlefield	F Coginchaug Riv.							
Mattabassett Riv.	Cromwell	R Connecticut Riv.							
	Middletown								
Menunketesuck Riv.	Killingworth	S Plane Bk.	B-9	*	*				
	Clinton								
	Westbrook								
Mill Riv.	Haddam	F Connecticut Riv.							
Mine Bk.	E. Hampton	F Connecticut Riv.	C-2½						
Mine Bk.	Portland	F Reservoir Bk.							
Molley Bk.	E. Haddam	F Moodus Res.							
Moodus Riv.	E. Haddam	S Salmon Riv.	C-8						
Mud Bk.	Essex	F Falls Bk.		*					
Muddy Bk.	E. Haddam	F Eight Mile Riv.							

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Muddy Gutter Bk.	E. Hampton	F	Pocotopaug Crk.	B-1	*	*				
North Mt. Bk.	Middlefield	F	Beseck Lake							
Oyster Riv.	Old Saybrook	F	Long Island Sd.	D-3						
Parmalee Bk.	Durham	F	Coginchaug Riv.		*	*				
Patchogue Riv.	Westbrook	F	Long Island Sd.	C-5	*	*				
Pattaconk Bk.	Chester	S	Connecticut Riv.	B-4						
Pine Bk.	Haddam	S	Salmon Riv.	B-8	*	*				
	E. Hampton									
Pine Bk.	E. Haddam	F	Moodus Res.							
Plane Bk.	Westbrook	S	Menunketesuck R.							
Pocotopaug Creek	E. Hampton	S	Pine Bk.	D-3½						
Pole Ridge Bk.	Haddam	F	Mill Riv.							
Pond Meadow Bk.	Killingworth	F	Kroopa's Pond	C-2½						
Ponset Bk.	Haddam	S	Connecticut Riv.	B-5	*	*				
Ray Bk.	E. Haddam	F	Succor Bk.							
Reservoir Bk.	Portland	F	Connecticut Riv.	B-3	*	*				
Roaring Bk.	Middletown	F	Fall Bk.							
	Middlefield									
Roaring Bk.	E. Haddam	F	Connecticut Riv.							
	Lyme									
Roaring Bk.	Old Saybrook	F	Dibble's Ice Pond							
Salmon Riv.	E. Hampton	R	Connecticut Riv.	C-13			*	*	*	
	Haddam									
	E. Haddam									
Salt peter Bk.	Haddam	F	Ponset Bk.	C-2	*	*				
Saw Mill Bk.	Durham	F	Coginchaug Riv.	C-4	*	*		*		
Saw Mill Bk.	Middletown	F	Falls Bk.	C-2½						
Simon Bk.	Saybrook	F	Connecticut Riv.							
Soestrom Bk.	E. Hampton	F	Salmon Riv.		*					
Strong's Bk.	E. Haddam	F	Eight Mile Riv.							
Succor Bk.	E. Haddam	F	Connecticut Riv.							
Sumner Bk.	Middletown	S	Connecticut Riv.	C-6	*					
	Durham									
Swain Johnson Bk.	Haddam	F	Connecticut Riv.							
Tiffany Bk.	Essex	F	Mud Bk.		*					
Tocus Hole Bk.	Haddam	F	Connecticut Riv.							
Trout Bk.	Westbrook	F	Patchogue Riv.	C-2	*	*				
Valley Bk.	E. Haddam	F	Roaring Bk.							
Wadsworth Bk.	Durham	F	Hersig Bk.	C-4	*	*				
Ward Bk.	Saybrook	F	Falls Riv.		*					
	Essex									
Water House Bk.	Chester	F	Pattaconk Bk.	D-2	*					
West Swamp Bk.	Middletown	F	Mattabasset R.	D-3½						
White Horse Bk.	Durham	F	Coginchaug Riv.		*	*				
Wilcox Bk.	Middletown	F	Sawmill Bk.							
Willeys Bk.	E. Hampton	F	Pocotopaug Lake							

## TOLLAND COUNTY

Abbey Bk.	Somers	F	Scantic Riv.		*	*				
	Ellington									
Aborn Bk.	Ellington	F	Crystal Lake	C-1½	*		*		*	
Aggard Bk.	Stafford	F	Delphi Bk.	B-¾						
Alden Bk.	Stafford	F	Furnace Bk.	B-3	*	*				
Andover Lake Bk.	Andover	F	Hop Riv.	B-1¾	*					
Ash Bk.	Coventry	F	Hop River	B-2¾						
Atwoodville Bk.	Mansfield	F	Mt. Hope Riv.	C-¾	*					

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Avery Bk.	Somers	F Scantic Riv.	D-¾	*	*				
Bahler's Bk.	Ellington	F Broad Bk.	C-1½	*					
Baker Bk.	Bolton	F Skinner Bk.	C-1½						
Bald Hill Bk.	Union	F Stickney Hill Bk.	C-1						
Barrows Bk.	Vernon	F Tancanhoosen R.	C-1½						
	Tolland								
Bear Swamp Bk.	Andover	F Hop Riv.	B-2						
Belding Bk.	Ellington	F Hockanum Riv.	B-1	*					
Bigelow Bk.	Union	S Natchaug Riv.							
Bishop Bk.	Andover	F Hop River	B-3	*					
Blackledge Riv.	Hebron	R Salmon Riv.	B-14¾						
	Bolton								
Blackman's Bk.	Andover	F Hop River	B-1¾						
Bolton Pond Bk.	Bolton	F Hop Riv.	D-1½	*					
	Coventry								
Bone Mill Bk.	Ellington	F Willimantic Riv.	B-1¾						
	Tolland								
Bone Mill Bk. N.B.	Ellington	F Bone Mill Bk.	C-1½						
Bowler's Bk.	Tolland	F Willimantic Riv.	C-¾						
Branch Bk.	Union	F Bigelow Bk.	B-3						
	Eastford								
Brandy Bk.	Stafford	F Roaring Bk.	C-¾	*					
Breakneck Bk.	Union	F Massachusetts							
Brigham Tavern Bk.	Coventry	F Willimantic Riv.	C-1¾						
Broad Bk.	Ellington	S Scantic Riv.	A-4, B-3	*	*				
Brooks Bk.	Tolland	F Skungamaug Riv.	C-1½						
Broll Bk.	Vernon	F Ogden Bk.	C-1						
Brousseau's Pond Bk.	Columbia	F Ten Mile Riv.	C-1½						
Brown's Bk.	Tolland	F Meacham's Bk.	B-1½						
Bugby Pond Bk.	Willington	F Willimantic Riv.	D-¾						
Bundy's Bk.	Mansfield	F Fenton Riv.	C-1½						
Campbell's Bk.	Ellington	F Hockanum Riv.	C-1½						
	Vernon								
Campbell's Farm Bk.	Vernon	F Ogden Bk.	D-1						
Cedar Swamp Bk.	Mansfield	F Weaver Bk.	C-4						
	Willington								
Cedar Swamp Bk.	Stafford	F Roaring Bk.	B-1¾						
Cemetery Bk.	Tolland	F Meacham's Bk.	B-2½	*					
Cemetery Bk.	Stafford	F Middle Riv.	D-¾						
Chapin Bk.	Mansfield	F Fenton Riv.	C-2½						
Chapin's Meadow Bk.	Tolland	F Skungamaug Riv.							
Charter Bro. Bk.	Stafford	F Middle Riv.	C-1½						
Charters Bk.	Ellington	F Meacham's Bk.	A-3½	*					
	Tolland								
Charter's Bk.	Tolland	F Skungamaug Riv.		*					
Chase Bk.	Stafford	F White's Bk.	C-2½						
Cheney Hollow Bk.	Andover	F Andover Lake	B-2½						
Chickery Hill Bk.	Mansfield	F Conant Bk.	C-1						
Cider Mill Bk.	Mansfield	F Willimantic Riv.	C-2						
Clark Bk.	Tolland	F Willimantic Riv.	C-1¾						
	Coventry								
Clark's Bk.	Columbia	F Macht Bk.							
Clarks Bk.	Vernon	F Tancanhoosen R.	C-1½	*					
Cloughs Bk.	Tolland	F Skungamaug Riv.	B-2						
Cod Fish Falls Bk.	Mansfield	F Fenton Riv.	B-2	*					
	Willington								
Cold Bk.	Willington	F Conant Bk.	B-½						
Collins Bk.	Columbia	F Giffords Bk.							

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Columbia Lake Bk.	Columbia	F Hop Riv.	C-1	*					
Conant Bk.	Mansfield	F Fenton Riv.	B-3	*					
Conant Bk.	Willington	F Willimantic Riv.	B-4						
Conninville Mill Bk.	Mansfield	F Natchaug Riv.	D-1½						
Coventry Bk.	Coventry	F Skungamaug Riv.							
Coventry Lake Bk.	Coventry	F Willimantic Riv.							
Crane Bk.	Mansfield	F Mt. Hope Riv.							
Creamery Bk.	Ellington	F Broad Bk.	C-1¼						
Crow Hill Bk.	Stafford	F Middle Riv.	D-1¼						
Crystal Lake Bk.	Stafford	F Middle Riv.	C-3¼	*	*				
Curtis Bk.	Willington	F Fenton River	B-1¼						
Dam Bk.	Columbia	F Giffords Bk.	C-1¼						
Daniels Bk.	Hebron	F W.B. Fawn Bk.							
Davis Bk.	Ellington	F Belding's Bk.	C-1						
Delphi Bk.	Stafford	F Stafford Res.	A-1½	*					
Diamond Bk.	Stafford	F Crystal Lake Bk.	B-3						
Dunham Lake Bk.	Mansfield	F Willimantic Riv.	C-1¼						
Eagleville Bk.	Mansfield	F Willimantic Riv.	C-2¼						
Eagleville Pond Bk.	Coventry	F Willimantic Riv.	C-1¼						
Echo Lake Bk.	Mansfield	F Fenton Riv.	D-1						
Edgerton's Bk.	Vernon	F Ogden Bk.	D-1¼						
Eldridge Bk.	Willington	F Fenton Riv.	B-1, C-1¼						
Eno Bk.	Willington	F Fenton Riv.	D-1¼	*					
Fawn Bk.	Hebron	S Blackledge Riv.	A-8¼	*					
Fawn Bk. W.B.	Andover								
Fawn Bk. W.B.	Hebron	F Fawn Bk.	B-4¼	*					
Fenton Riv.	Mansfield	R Natchaug Riv.	B-13	*	*				
Foot Saw Mill Bk.	Marlboro	F Blackledge Riv.							
Furnace Bk.	Hebron								
Furnace Bk.	Stafford	F Glenville Pond	D-3¼						
Gages Bk.	Tolland	F Town Bk.	B-¾						
George's Bk.	Willington	F Fenton Riv.	B-1¼						
Giffords Bk.	Columbia	F Ten Mile Riv.	B-2¼						
Gillette's Bk.	Somers	F Avery Bk.	B-2, C-3	*	*				
Ginger Bk.	Stafford	F Shady Bk.	C-1¼	*					
Grants Bk.	Tolland	F Meacham's Bk.	B-1¼						
Grapevine Bk.	Tolland	F Willimantic Riv.	B-2	*					
Green Bk.	Coventry	F Skungamaug Riv.	C-1¼						
Green Bk.	Tolland	F Willimantic Riv.	C-1½						
Grover Bk.	Tolland	F Skungamaug Riv.	B-2						
Gulf Stream	Somers	F Scantic Riv.	A-2¼, B-2	*	*				
Hall Hill Bk.	Somers	F Scantic Riv.	D-2¼						
Hank's Bk.	Mansfield	F Fenton Riv.	C-1¼	*					
Hatch Bk.	Stafford	F Furnace Bk.							
Hatch Bk.	Union	F Deckmore Pond	D-¼						
Hemlock Bk.	Coventry	F Skungamaug Riv.	C-1¼	*					
Hendersons Bk.	Tolland	F Willimantic Riv.	B-1						
Hockanum Riv.	Vernon	R Connecticut Riv.	D-19			*	*		
Hockla Bk.	Ellington								
Hockla Bk.	Willington	F Fenton Riv.	D-¾						
Hop Riv.	Columbia	S Willimantic Riv.	B-2, C-1¼, C-10	*	*				
Hope Valley Bk.	Coventry								
Hope Valley Bk.	Andover								
Hope Valley Bk.	Bolton								
Hope Valley Bk.	Hebron	F Salmon Riv.	A-2						
Hopyard Bk.	Stafford	F Crystal Lake Bk.							
H. Crandell's Bk.	Tolland	F Skungamaug Riv.		*					
Hyde's Bk.	Ellington	F Broad Bk.	D-1¼						
Johnson's Bk.	Mansfield	F Codfish Falls Bk.	C-1						

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Judd Bk.	Hebron	F Salmon Riv.	C-2½						
Kalis Bk.	Tolland	F Skungamaug Riv.		*					
Keenes Bk.	Willington	F Roaring Bk.	A-2½	*					
Ketch Bk.	Ellington	F Scantic Riv.	A-4½						
Kibbe's Bk.	Ellington	F Broad Bk.	C-1¾						
Kidder Bk.	Willington	F Fenton Riv.	C-1¾	*					
Kimball's Bk.	Ellington	F Broad Bk.	B-2	*					
Kings Bk.	Mansfield	F Eagleville Bk.		*	*				
Knowlton Pond Bk.	Mansfield	F Mt. Hope Riv.							
Kroniski Bk.	Somers	F Scantic Riv.		*					
Labonete's Bk.	Tolland	F Willimantic Riv.	B-1½						
Larson Bk.	Tolland	F Skungamaug Riv.		*					
Lead Mine Pond Bk.	Union	F Bigelow Bk.	D-¾						
Lee Bk.	Coventry	F Skungamaug Riv.	C-1	*					
Leutjen's Bk.	Vernon	F Clarks Bk.	D-¾						
Lewer's Bk.	Somers	F Gulf Stream	C-1½						
	Stafford								
Lewis Bk.	Tolland	F Skungamaug Riv.	D-¾						
Lost Pond Bk.	Union	F Sessions Bk.							
Macht Bk.	Columbia	F Hop Riv.	B-1¾	*	*				
Marsh Bk.	Ellington	F Hockanum Riv.	D-2¾						
Marsh Meadow Bk.	Tolland	F Polk Hill Bk.							
Martin's Bk.	Tolland	F Shenipsit Lake	C-¾						
Mason's Bk.	Willington	F Fenton Riv.	C-1¾						
	Mansfield								
Massinger Bk.	Andover	F Bishop Bk.	D-¾		*				
May's Bk.	Union	F Hamilton Res. (Massachusetts)	B-1½	*					
McIntyre's Bk.	Stafford	F Crystal Lake Bk.	C-2	*					
Meacham's Bk.	Tolland	F Shenipsit Lake	A-4	*	*	*		*	
	Ellington								
Middle Riv.	Stafford	S Willimantic Riv.	C-5½	*	*		*		
Mint Bk.	Hebron	F Raymond Bk.	C-2¾						
	Columbia								
Mitchell's Bk.	Stafford	F Middle Riv.	C-2	*					
Mitchell's Bk.	Stafford	F White's Bk.	C-¾						
Mittelholtzer Bk.	Coventry	F Skungamaug Riv.	D-1½						
Mt. Hope Riv.	Mansfield	S Fenton Riv.	B-8	*	*				
	Union								
Muddy Bk.	Ellington	F Broad Bk.	B-2	*					
Natchaug Riv.	Mansfield	R Shetucket Riv.	A-14						
Neft Bk.	Tolland	F Grover Bk.	C-¾						
New City Bk.	Stafford	F Stafford Res.	C-1						
Nitchart Bk.	Stafford	F New City Pond	C-1¾						
Ogden Bk.	Vernon	F Hockanum Riv.	B-1½	*					
Olson's Bk.	Coventry	F Skungamaug Riv.	B-2						
Park Bk.	Hebron	F Salmon Riv.							
Pease's Bk.	Somers	F Abbey Bk.	C-1½	*					
Peck's Bk.	Ellington	F Ketch Bk.	B-2	*	*				
Pinney Bk.	Ellington	F Marsh Bk.		*					
Polk Hill Bk.	Tolland	F Skungamaug Riv.	B-1, C-1	*					
Post Bk.	Andover	F Andover Lake	C-¾						
Potash Bk.	Stafford	F Stafford Res.	C-1¾						
Powaski's Bk.	Tolland	F Spice Bk.	B-1½						
Railroad Bk.	Bolton	F Tancanhoosen R.	B-2¾						
	Vernon								
Raymond Bk.	Hebron	S Salmon Riv.	B-5		*				
Reed's Bk.	Union	F Bigelow Bk.							
Rickenback Bk.	Vernon	F Tancanhoosen R.	C-¾						

Name of Brook	Town	Type Trib. to	Rating	Brook Fingerling	Brook Adults	Brown Fingerling	Brown Adults	Rainbow Fingerling	Rainbow Adults
Rieds Bk.	Coventry	F Skungamaug Riv.	D- $\frac{3}{4}$						
Roaring Bk.	Willington Stafford Union	S Willimantic Riv.	A-9		*				
Roberts Bk.	Mansfield	F Fenton Riv.	C-1 $\frac{1}{2}$						
Rocky Dundee Bk.	Stafford	F Scantic Riv.	A-1 $\frac{1}{2}$						
Rocky Dundee Bk. E.B.	Stafford	F Rocky Dundee B.	C-1 $\frac{1}{2}$						
Ruby Bk.	Willington	F Roaring Bk.	D- $\frac{3}{4}$	*					
Rufus Bk.	Coventry	F Hop Riv.	B-1 $\frac{1}{2}$						
Salmon Riv.	Hebron	R Connecticut Riv.	C-13	*	*	*			
Saw Mill Bk.	Mansfield	F Natchaug Riv.	B-4						
Saw Mill Bk.	Stafford	F State Line Pond	B- $\frac{3}{4}$						
Scantic Riv.	Somers	R Connecticut Riv.	B-4, C-14						
Schanade Bk.	Somers	F Scantic Riv.	C-1 $\frac{1}{2}$	*					
Sessions Bk.	Union	F Still Riv.							
Shady Bk.	Stafford	F Willimantic Riv.							
Shady Bk.	Somers	F Gulf Stream	D-1 $\frac{1}{2}$						
Shenipsit Lake Bk.	Ellington	F Shenipsit Lake	C- $\frac{3}{4}$						
Skinner Bk.	Hebron Bolton Andover	F Hop Riv.	B-1 $\frac{1}{2}$ , C-2 $\frac{1}{2}$	*	*				
Skungamaug Riv.	Coventry Tolland Andover	R Hop Riv.	A-13	*	*				
Somerville Bk.	Somers	F Scantic Riv.	D- $\frac{3}{4}$						
So. Willington Bk.	Willington	F Willimantic Riv.	D-1 $\frac{1}{2}$						
Spice Bk.	Tolland	F Skungamaug Riv.	B-2 $\frac{1}{2}$						
Spring Hill Bk.	Mansfield	F Fenton Riv.							
Steep Gutter Bk.	Stafford	F Furnace Bk.	C						
Stickney Hill Bk.	Union	F Roaring Bk.	B-2 $\frac{1}{2}$						
Stiles Bk.	Willington	F Fenton Riv.	B-1						
Still Bk.	Stafford	F State Line Pond	A-1 $\frac{1}{2}$	*	*				
Stoughton Bk.	Stafford Union	F Roaring Bk.	C-3 $\frac{1}{2}$	*					
Sucker Bk.	Tolland	F Shenipsit Lake	B-1 $\frac{1}{2}$						
Tancanhoosen Riv.	Vernon	F Hockanum Riv.	A-3, C-2	*	*				
Ten Mile Riv.	Columbia	S Willimantic Riv.	B-2 $\frac{1}{2}$ , C-2	*	*				
Theims Bk.	Coventry	F Hop Riv.	C-1 $\frac{1}{2}$						
Thompson Bk.	Ellington	F Broad Bk.	D- $\frac{3}{4}$						
Thrasher Bk.	Somers	F Scantic Riv.	C-3	*	*				
Tillinghast's Bk.	Vernon	F Tancanhoosen R.	D-1 $\frac{1}{2}$	*					
Tolland Res. Bk.	Tolland	F Polk Hill Bk.		*					
Town Bk.	Tolland Vernon	F Walker Res.	B-1 $\frac{1}{2}$	*					
Tucker Bk.	Vernon	F Tancanhoosen R.	B-1 $\frac{1}{2}$	*					
Turkey Bk.	Ellington	F Belding's Bk.	C-1						
Upper Columbia Lake Bk.	Columbia	F Columbia Lake	D-2						
Watchaug Bk.	Somers	F Scantic Riv.	B-1 $\frac{1}{2}$	*					
Weaver Bk.	Mansfield	F Eagleville Pond	C-2						
Wells Bk.	Union	F Mashapaug Lake	C-2 $\frac{1}{2}$						
West Bk.	Tolland	F Shenipsit Lake	B-1 $\frac{1}{2}$						
West Stafford Bk.	Stafford	F Crystal Lake Bk.	D- $\frac{1}{2}$						
White Lot Bk.	Ellington	F Crystal Lake	C-1						
White's Bk.	Stafford	F Crystal Lake Bk.							
Willimantic Riv.		R Shetucket Riv.	B-12, C-9 $\frac{1}{2}$	*		*		*	*
Winding Bk.	Coventry	F Willimantic Riv.	C-1 $\frac{1}{2}$						
Woods Stream	Somers	F Scantic Riv.		*	*				

**LIST OF PONDS AND LAKES IN CONNECTICUT**  
**Stocked With Pond Fishes by the State Board of Fisheries and Game**  
**1930 - 1934**

**ARRANGED BY COUNTIES**

Showing the Kinds of Fishes Known To Inhabit Each Stocked Pond or Lake\*  
 and Indicating the Kind of Fishes Planted\*\*

White perch are not included in these records

\* Fish known to inhabit pond.

\*\* Fish stocked.

**HARTFORD COUNTY**

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Arnold Pond	Farmington				**			**		
Batterson Park Pond	Farmington			**	**			**	**	
			*		*			*		
Birge Pond	Bristol				**			**		
			*		*			*		
Boggie Stowe Pond	Manchester				**			**		
Broad Brook Pond	East Windsor				**					
Buena Vista Pond	Farmington				**					
			*		*			*	*	*
Cannons Cove	Suffield				**					
Cedar Swamp Lake	Bristol, Wolcott	**	**	**	**			**	**	**
			*		*			*	*	*
Cherry Park Pond	Avon, Canton			**	**			**	**	**
			*		*			*	*	*
Clark Pond	Berlin				**					
Compounce Lake	Southington	**	**		**			**	**	**
		*	*		*			*	*	*
Daniels Cove	East Granby				**			**		
Diamond Lake	Glastonbury				**			**		
			*		*			*		
Fresh Water Pond	Enfield				**			**		
			*		*			*	*	*
Griswold Pond	Wethersfield				**					
			*		*			*		*
Hamlin Pond	Plainville		**		**			**		
			*		*			*	*	*
Hartland Lake	Hartland				**					
		*	*		*			*	*	*
Hart's Ponds	Berlin				**					
			*		*			*		
Kirchhof Pond	East Windsor				**					
										*
Little Pond	Windsor				**			**		
			*		*			*	*	*
Malone's Pond	Bristol				**			**		
Manatook Lake	Granby	**	**	**	**			**	**	**
		*	*		*			*		
Marsh Pond	East Granby				**			**		
			*		*			*		*
Merwin's Pond	Berlin							**		
			*					*		

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Mill Pond	Newington				*			**		
Oil City Pond	Windsor				**			**		
Old Marsh Pond	Bristol, Plymouth	**	**	**	**	*		*	**	**
Paper Goods Pond	Berlin				**			**		
Park Pond	Plainville				**					
Peat Works Pond	Berlin		**	**	**			**	**	
Plantsville Pond	Southington	**	**		**	*		**	**	**
Railroad Pond	Berlin				**			**		
Reynold's Pond	Berlin	*	*		*				*	*
Schwartz Pond	Suffield				**			**		
Shaker Pond	Enfield	**	*		**			**	*	
Spencer Pond	Suffield	*	*		*			**	*	
Spring Pond	Berlin				**			**		
Terramuggus Lake	Marlboro	**	**		**			**		
Stony Brook Pond	Suffield	*	*		*			*	/*	*
Upper Basin Pond	Windsor Locks	**	**		**			**		
Vinton's Mill Pond	South Windsor	*	*		*			*		
White Oak Pond	Plainville				**			**		
Windsorville Pond	East Windsor		*		*			*	*	

## NEW HAVEN COUNTY

Beaver Pond	Meriden		**	**	**			**	**	
Black Pond	Meriden, Middlefield	**	**	**	**			**	*	*
Cedar Pond	North Branford	*	*		**			**		*
Hanover Pond	Meriden	**	**	**	**			**	**	**
Housatonic Lake	Derby, Shelton		*	**	**			*	*	**
Kerite Cable Co. Pond	Seymour		**		**			*	*	
Konolds Pond	Woodbridge		**	**	**			**	**	
Lakewood Pond	Waterbury	**	**	**	**			**	*	
Lilly Pond	Milford	*	*		*			*		
Lindley's Pond	Woodbridge		**	**	**			**		
Linsley Pond	North Branford		**	**	**			**		
Little Black Pond	Meriden	*	*		*			**	*	*

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Long Meadow Pond	Middlebury		**	**	**			**	**	
Mangers Pond	Guilford		**		**			*	*	
Hitchcock Lake	Wolcott, Waterbury	**	**	**	**			**	**	**
Moose Hill Pond	Oxford		**		**			**		*
North Farms Reservoir	Wallingford		**	**	**			**		*
Old West Haven Reservoir	West Haven		**		**			**		
Paper Mill Pond	Seymour		**		**			**		
Pearl Lake	Waterbury		*		*			**		
Phipps Lake	West Haven		**	**	**			**	**	**
Pond Lily Pond	New Haven		**		**			**		
Quassapaug Lake	Middlebury	**	**		**			**		
Quonnipaug Lake	Guilford	*	**	**	*			*		
Rose's Pond	Milford		**	**	**			**	**	**
Simpson Pond	Wallingford		**		**			**		
Strong's Pond	Woodbridge, Bethany		**	**	**			**		*
Tracys Pond	Waterbury		**		**			**		
Wallingford Reservoir	Wallingford		*		*			*		
West Pond	Guilford		**	**	**			**		
Zoar Lake	Oxford, Newtown	*	**	**	**	**		**	**	**
		*						*		

NEW LONDON COUNTY

Amos Lake	Preston	**	**	**	**			**		
Ashland Pond	Griswold		*	**	*			*		
Aspinook Pond	Griswold, Lisbon, Canterbury	*	*		**			*	*	*
Avery Pond	Preston		*		**			**		
Bailey's Pond	Voluntown				**			*		
Baltic Pond	Sprague, Baltic	**	**	**	**			**		
Beach Pond	Voluntown	*	*		**			*	*	*
Beachdale Pond	Voluntown				**			**		
Big Pond	Windham	*	*		**			**	*	*
Black Hall Pond	Old Lyme		**	**	**			**		
Blissville Pond	Lisbon		*		*			*	*	*
Bradbury Pond	Old Lyme		*		**			*		
		*	*		*			*		

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Brewster Pond	Lebanon		*		**			**		
Carrol Reservoir	Griswold				**			*	*	*
Chesebro's Pond	Stonington				**			**		
Clark's Falls Pond	North Stonington		*	**	**			**		
Clayville Pond	Griswold		*	**	**			**		
Crystal Lake	Groton	*	*		*			*	*	
Darrow's Pond	East Lyme				**			**		
Dodge Pond	East Lyme	**	**		**			**		
Donahue Pond	Sprague	*	*		*			*		
Dye House Pond	New London				**			**		
Fitchville Pond	Bozrah	**	**		*			*		
Gardner Lake	Salem, Montville, Bozrah	**	**	**	**			**		
Glasgo Pond	Griswold	**	**	**	**			*	*	*
Grants Pond	Franklin	*	*		*			**	*	*
Green Falls Res.	Voluntown	**	*	**	**			**		
Greenville Pond	Norwich, Preston		*	*	*			*	*	
Groton Pond	East Lyme			**	**			**	**	**
Hallville Reservoir	Preston		*		*			*	*	*
Hinckley Pond	Lebanon				**			**		
Hopeville Pond	Griswold		**		**			**		
Horse Pond	Salem	*	*	*	*			*	*	*
Lantern Hill Pond	Ledyard, No. Stonington	**	**	**	**			**	**	**
Locke Pond	Lebanon		*		*			*		
Long Pond	Ledyard, No. Stonington	**	**	**	**			**		*
Millers Pond	Waterford	**	*		*			*		
Norwich Falls Pond	Norwich				**			*	*	*
Occum Pond	Norwich, Sprague			**	**			**		
Oxoboxo Lake	Montville	**	**	**	**			**		
Palmer Pond	Lebanon	*	*		*			*		*
Paper Mill Pond	Sprague				**			**		
Pataganset Lake	East Lyme	*	*	*	*			*	*	*
Perry Ice Co. Ponds	Waterford	**	**	**	**			**	**	**
Pickereel Lake	Colchester	*	*		*			*		
Powers Lake	East Lyme		*		*			*		

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Ripley Park's Pond	No. Stonington				**					
Rogers Lake	Lyme	**	**	**	**			**	**	**
Scholfield Pond	Montville	*	*	**	**			**		
Spaulding Pond	No. Stonington			**	**			**	*	*
Spaulding Pond	Norwich		*		**			*		
State Hospital Pond	Preston				**			*		
Tadma Pond	Bozrah		*		**			**		*
Taftville Pond	Norwich, Lisbon				**			*		
Trading Cove Pond	Norwich, Montville				**			**		
Trails Pond	Groton			**	**			**	**	**
Wheeler Pond	Montville				**			**		
Williams Pond	Lebanon				**					
Wyassup Lake	No. Stonington			**	**					
		*	*		*			*	*	*

## FAIRFIELD COUNTY

Ball Pond	New Fairfield	**	**	**	**			**		
Beardsley Park Pond	Bridgeport	*	*	*	*			*	*	
Bishop Mill Pond	Norwalk		**	**	**			**		**
Buttonshop Pond	Newtown		*		*			*	*	*
Candlewood Lake	New Milford, Sherman, New Fairfield, Danbury	**	**	**	**	**	**	**	**	**
Chasmers Pond	Darien, Norwalk			**	**			**	*	
Coger's Pond.	Newtown		*		**			**	*	
Corner Pond	Danbury, New Fairfield			**	**			**		
Curtiss Pond	Newtown		*		**			**		**
Davis Pond	Norwalk				**			*	*	*
Dumpling Pond	Greenwich	*			**			*	*	*
Foundry Pond	Newtown		*		**			*	*	
Gilbert's Pond	Newtown				**			**		
Gilbert & Bennett Pond	Redding, Wilton				**			**		
Godfrey's Pond	Weston	*	*		**			*	*	
Great Pond	Ridgefield		*		**			*	*	*
Groups Reservoir	New Canaan		*		**	**		**	*	*
Kenoshia Lake	Danbury	*	*	**	**			**	*	*
		*	*		*			*	*	*

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Lee's Pond	Westport		**		**			**		
Lockwood Pond	New Canaan		*		**			*	*	
Mamanassee Pond	Ridgefield		*	**	**			**		
Mianus Pond	Greenwich	*	*	**	**			**	*	
Morgan Pond	Newtown				**			**		
Nash Ice Pond	Westport		*		**			*	*	
Ondex Pond	Monroe				**			**		
Perry's Mill Pond	Fairfield				**			*		
Putnam Park Pond	Redding		**		**			**		
Samp Mortar Reservoir	Fairfield	**	**	**	**			**	*	**
Seeley's Pond	Bridgeport	*	*		**			**		
Shepard's Pond	Newtown				**			**		**
So. Norwalk Reservoir	Wilton		*	*	**			**	*	
Stillwater Pond	Stamford	*	*	**	**			*		
Taunton Pond	Newtown	**	**	**	**			**	*	**
Trumbull Reservoir	Trumbull	*	*		*			**	*	*
Winnipaug Mill Pond	Norwalk		*		**			**		
		*	*					*	*	

## WINDHAM COUNTY

Alexander Lake	Killingly	**	**		**	**		**	**	**
Appley's Pond	Canterbury	*	*		*			*		*
Auger Pond	Thompson				**					
Bennetts Pond	Canterbury				**			**		
Big Pond	Windham	**	**	**	**			**	**	**
Black Pond	Woodstock	*	*		*			*	*	*
Bog Meadow Pond	Killingly				**				**	
Central Village Mill Pond	Plainfield		*		*			*		
Crystal Pond	Eastford	**	**		**			**	**	
Darling Pond	Chaplin	*	*		*			*		*
Edie Prey Reservoir	Killingly				**			**		
Evans Pond	Plainfield				**			**		
Ford Ned Pond	Canterbury				**			**		
Goodyear Pond	Killingly				**			*	*	*

Name of Pond or Lake	Location	Black Bass	Pickarel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Hall's Pond	Eastford	**	**		**			**	**	**
Hampton Reservoir	Hampton		*	**	**			**		*
Hawas Pond	Canterbury							**		
Kenyonville Pond	Woodstock		*		**			**		
Little Pond	Thompson	**	**		**			**		
Mechanicville Pond	Thompson				**					
Moosup Pond	Plainfield	**	**		**			**	**	**
No. Grosvenordale Pond	Thompson	*	*		*			**		*
No. Windham Pond	Chaplin		*		**			**		
Old Killingly Pond	Killingly	*	*		*			*		
Old Killingly Pond	Killingly	**	**		**			**	**	**
Oneco Pond	Sterling				*			*	*	
Packer Pond	Plainfield		*		**			**		*
Prentice Pond	Putnam				**			**		
Quaduck Pond	Thompson				**			**		
Roseland Lake	Woodstock	**	*		*			*		*
Schoolhouse Pond	Pomfret, Thompson	**	**		**			**	**	**
Sterling Mill Pond	Sterling				**			*		
Wappaquasset Pond	Woodstock		**		**			**	**	**
Wauregon Pond	Plainfield, Brooklyn		*		**			*		*
West Thompson Pond	Thompson				**			*		
Wrights Pond	Canterbury		*		**			**		

LITCHFIELD COUNTY

Bantam Lake	Litchfield	**	**	**	**			**		**
Black Rock Pond	Watertown	*	*		*			**	*	
Burr Reservoir	Torrington		**	**	**			**	**	**
Coe's Brass Co.'s Pond	Torrington		*		**			*		
Compensating Reservoir	N. Hartford, Barkhamsted		**		**			**		
Cream Hill Pond	Cornwall	**	**		**			**	**	
Crissey Pond	Norfolk	*	*		*			*	*	*
Dog Pond	Goshen	**	**		**			**	**	**
Greenwood Pond	Barkhamsted, N. Hartford		*		*			*		
Hatch Pond	Kent	**	**	**	**			**		
Highland Lake	Winchester	*	*		*			*	*	*
Judd's Pond	Watertown	**	**	**	**			**	**	**
		*	*		*			*	*	*

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Leonard Pond	Kent	*	*	**	**			**		*
Mt. Riga Lake	Salisbury				**					
Mt. Tom Pond	Litchfield, Morris, Washington	**	**	**	**			**	**	
Mudge Pond	Sharon	*	*	**	**			**	*	
No. Spectacle Lake	Kent	**	*	**	**			**		*
Park Pond	Winchester	*	*		**					
Pond Hill Pond	Norfolk			**	**					
So. Spectacle Lake	Kent	*	*	**	**			**		*
Stillwater Pond	Torrington	*	*	**	**			**	**	**
Toby Pond	Norfolk				**			*	*	
Twin Lakes	Salisbury	**	**	**	**		**	**	**	**
Tyler Pond	Goshen	**	**	**	**			**	**	**
Waramaug Lake	Warren, Kent, Washington	**	*	**	**			**		*
Wattles Pond	Watertown		**	**	**			**	**	
West Hill Pond	New Hartford	**	**	**	**			**	**	
West Side Pond	Goshen		*	*	**			**	**	**
Winchester Lake	Winchester		*	*	**			**	**	
Wonopakook Lake	Salisbury		**	**	**			**	**	*
Wononscopomuc Lake	Salisbury	**	**	**	**		**	**		*
Wood Creek Pond	Norfolk		*	**	**			**	*	*

## MIDDLESEX COUNTY

Basham Pond	East Haddam	*	**		**			**		
Beesek Lake	Middlefield	*	*	**	**			*	**	**
Black Pond	Middlefield, Meriden	**		**	**			**	**	**
Bushnell Pond	Essex				**			**		
Cedar Lake	Chester	**	**	**	**			**	**	**
Centerbrook Cove	Essex				**					
Chapman Pond	East Haddam				**					
Clarks Pond	Essex				**					
Crystal Lake	Middletown		**	**	**			**	**	**
Dooley's Pond	Middletown	*	*	*	*			*	*	
		**	**	**	**			**	**	**
			*	*	*			*	*	

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Duese Pond	Chester				**			*		
East Mill Pond	East Haddam		*		**					
Essex North Cove	Essex				**					
Fricks Pond	Killingworth, Haddam				**				**	
Great Hill Pond	Portland	**	**	**	**			**	**	**
Grist Mill Pond	Chester		*		**				*	
Indian Lake	Clinton				**					
Ivoringtons Pond	Essex				**				*	
Job's Pond	Portland	**	*	**	*			*	**	**
Kelsey Pond	Clinton	*	*		*			*	*	
Moodus Reservoir	East Haddam		**		**			**	**	
Permachie Pond	Middletown	**	**	**	**			**	**	**
Pocotopaug Lake	East Hampton	**	**	**	**			**	**	**
Pratt & Reed Pond	Saybrook	*	*		*			*	*	*
Rogers Pond	Saybrook		*		**			**	**	*
Russell Jennings Pond	Chester		*		*			*	*	*
Shaw Lake	East Haddam	**	**	**	**			**	**	**
Starr Pond	Middletown	*	*		**			*	*	*
Warner Hammer Pond	Cromwell		**		**			**	**	**
Wright's Pond	Westbrook, Essex		*		*			*	*	*

## TOLLAND COUNTY

Bigelow Pond	Union				**			**		
Bolton Club Pond	Bolton, Vernon	**	*	**	*			*	*	*
Bonair Lake	Ellington, Tolland	*	*		*			*	*	*
Break Neck Pond	Union				**			*	*	*
Case's Pond	Andover		*		*			*	*	*
Columbia Reservoir	Columbia	**	**	**	**			**	**	**
Crystal Lake	Ellington, Stafford	**	**	**	**		**	**	**	**
Eagleville Pond	Mansfield	*	*		*		*	*	*	*
Echo Lake	Mansfield	**	**	**	**			**	**	*
Forestville Pond	Stafford		*		*			*	*	
Haydenville Pond	Stafford				**			**		

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	Smelt	Bullheads	Sunfish	Shiners
Hazard Pond	Somers		*		**			*		
Mashapaug Lake	Union	**	**		**			**	**	
Mirror Lake	Mansfield	*	*		*					*
Orcuttville Pond	Stafford			**	**			**	**	**
Plum Pond	Stafford		*	*	*			**	*	*
Rhode Island Mill Pond	Stafford			*	**			*		
Snipsic Lake	Tolland	**	*		*		**	**	*	*
Somerville Pond	Somers	*	*		**		*	*	*	*
Staffordville Reservoir	Stafford	**	**	**	**			**	**	**
State Line Pond	Stafford		*	**	**			*	*	*
Talcott Pond	Vernon			*	**			**		*
Tankerhooson Lake	Vernon				**			**		
Tolland Marsh Pond	Tolland		*		**			**		
Walkers Reservoir, Lower	Vernon				**			**		**
Walkers Reservoir, Upper	Vernon			**	**			*	**	*
Waumgumbaug Lake	Coventry	**	**	**	**	**		**	**	**
Woods Ice Pond	Bolton	*	*	*	*			*	*	

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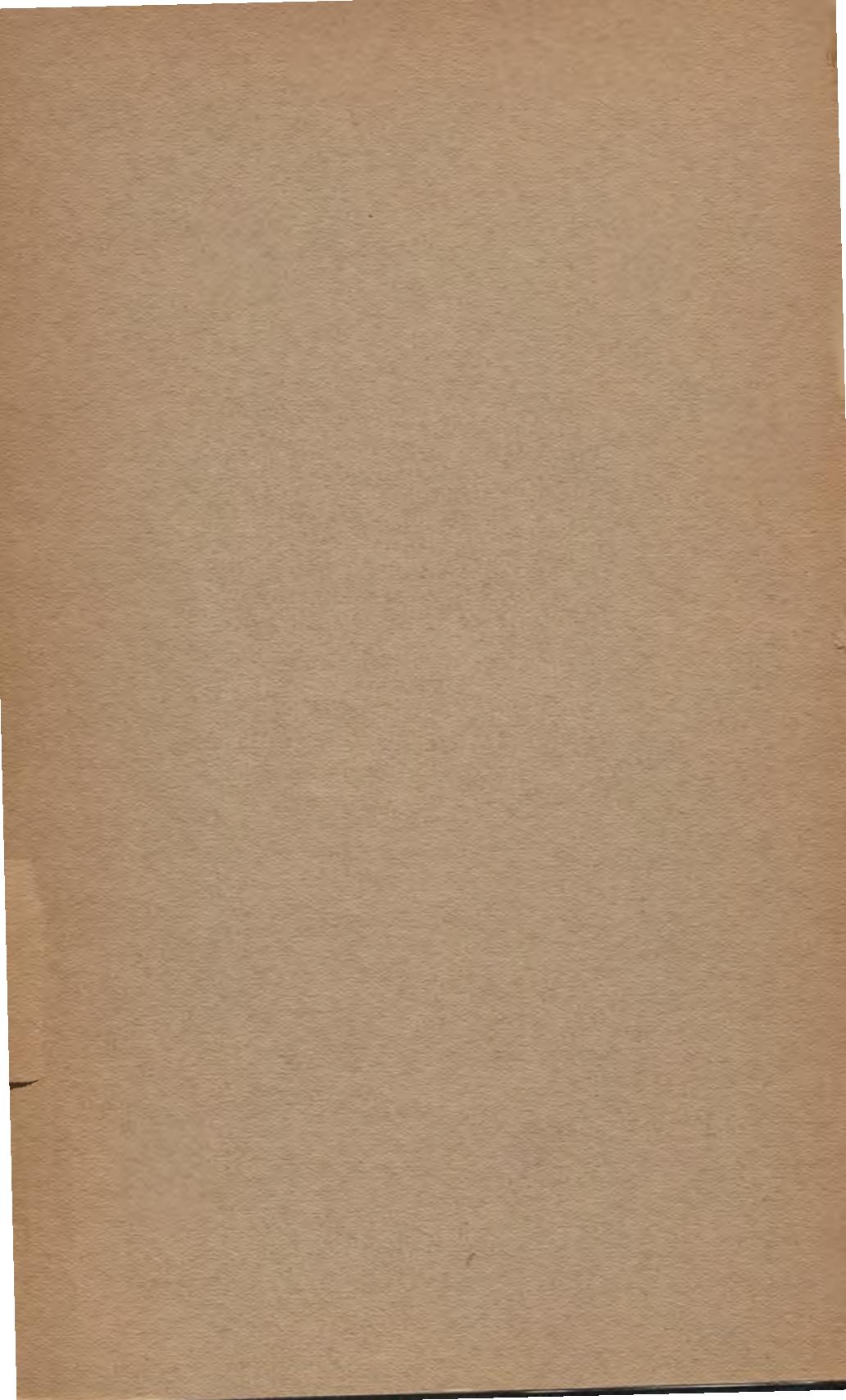
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State of Connecticut

**TWENTY-FIRST BIENNIAL REPORT**

OF THE

**STATE BOARD**

OF

**FISHERIES AND GAME**

FOR THE YEARS

**1934-36**

TO

**HIS EXCELLENCY, THE GOVERNOR  
AND THE GENERAL ASSEMBLY**





State of Connecticut

PUBLIC DOCUMENT No. 20

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HARTFORD  
PUBLISHED BY THE STATE

PUBLICATION  
APPROVED BY  
THE BOARD OF FINANCE AND CONTROL

T. F. RADY & CO.  
ROCKVILLE, CONN.

TO HIS EXCELLENCY, WILBUR L. CROSS,  
*Governor of Connecticut,*  
*Executive Chambers,*  
*Hartford, Connecticut.*

SIR:

The Commissioners of the State Board of Fisheries and Game submit herewith the twenty-first report of the activities of this Department for the two years ending June 30th, 1936.

The general awakening of public interest in the conservation of wildlife, recorded in the previous report, has been continued through this biennium. As more leisure time becomes available, the demands upon this Department are increased, since the opportunities for hunting and fishing offer the incentive which many people need to find their recreation out-of-doors.

A great deal of detail and relatively unimportant data omitted from this report is on file at the office of the Board and is accessible to any interested citizen. As a matter of policy, however, information regarding the number and kinds of fish and game liberated in any locality in any year is not made available until after the close of the season.

Respectfully submitted,

OLIVER B. ELLSWORTH, *Chairman,*  
JAMES G. HAMMOND,  
CHARLES F. GRIFFIN.

TO THE COMMISSIONERS

STATE BOARD OF FISHERIES AND GAME:

I have the honor to submit herewith a report of my administration of the duties imposed upon me by law, subject to your advice and approval, and of the activities of the several divisions of this Department for the biennial term ending June 30, 1936.

Following an established custom, the distribution of fish and game is reported for the two calendar years ending December 31, 1936.

I take this opportunity to express my appreciation of the support and helpful guidance which the Commissioners have given so freely during this difficult period which we hope may mark the end of a four-year depression.

Respectfully submitted,

ARTHUR L. CLARK, *Superintendent.*

Hartford, Conn., Dec. 31, 1936.

# TWENTY-FIRST BIENNIAL REPORT

of the

## STATE BOARD OF FISHERIES AND GAME

FOR THE YEARS 1934-1936

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### INTRODUCTION

The State Board of Fisheries and Game is that part of the whole state government which is charged with responsibility for the conservation of all wildlife resources except the shell fisheries. The interests of wildlife, therefore, represent the first and most important obligation of the Department.

The entire structure of wildlife administration is based on the theory, supported by many court rulings, that wildlife is the property of the State to be held in trust and to be used conservatively for the benefit of all the people now and in the future. Consequently, the interests of the general public represent the second obligation of the Department.

The third obligation is to serve the special interests of a relatively small group, representing less than four per cent of the total population in Connecticut, which is interested in taking certain species of wildlife either for sport, as in the case of game fishes, game birds and certain quadrupeds, or for profit, as in the case of fur-bearers, lobsters and certain inland and marine fishes. This use of a publicly owned, natural resource for the pleasure or profit of a relatively few private individuals is justified only so long as the annual crop is harvested conservatively and the future supply not endangered.

The theory and practice has become well established that those who wish to take fish or game for sport should pay to the State an extra tax or license fee for the privilege. The funds received from such license fees during this biennium represent about eighty per cent of the total revenues of the Department. These special funds are devoted entirely to the conservation and restoration of those species which are taken for sport and which need more attention and protection than any other species. Since special funds are available for such work it follows that the most conspicuous activities of the Department are those which relate to game birds, quadrupeds and game fishes.

This has led to a popular misconception that the Department is concerned primarily with serving the special interests of a group known collectively as sportsmen. In fact, many of that group actually believe that because they pay a special tax for the privilege of fishing or hunting, they have gained a collective ownership of the wildlife species in which they are interested.

The entire theory is wholly unsound, and when applied, it interferes more seriously than any other influence with the progress of wildlife administration. Wherever the theory finds support, there is found also an assumed but unwarranted belief that the special taxpayers have a right, if not an obligation, to direct the expenditure of those special tax funds. Invariably this leads to the employment of political and other influences in an effort to force the Department to adopt programs which are designed to benefit a special interest with disregard for all others and often at the expense of others.

The license holders constitute a thoroughly cosmopolitan group with widely varying interests. They are about equally divided in their interest in fishing and hunting. Within each group there are many who represent a special interest and who agree only on the point that they want better fishing or hunting conditions for the particular species with which they are concerned. They are rarely in a position to understand the factors which influence the status of the species in which they are interested and there is little if any agreement among them as to how their objective can be accomplished. Frequently, the interests of one group are in direct conflict with the interests of other special groups or of the general public.

The State Board of Fisheries and Game has the same objective as all the sportsmen. That is, to maintain a properly balanced supply of all species of wildlife which are adapted to our environment at a level which will furnish normally an annual surplus crop which can be harvested without affecting the future supply.

The Board is in a position to keep in close touch with all of the facts and information available regarding methods of accomplishing this objective. It employs technically trained men as well as men who have devoted many years to gaining practical experience in the general field as well as in specialized fields. Through cooperation with other state departments and with similar agencies in other states as well as through the Federal government, the Board may secure the temporary services of still other experts in related specialized fields.

The Department can employ new methods which are based on sound biological facts only so far as public opinion will support a change from the hit and miss procedures of the past which correspond to the methods used by Indian medicine men. The popular prejudices which delay the application of sound scientific methods are similar to those which characterized the days of witchcraft. There are some who assume the role of martyrs and crusaders in their opposition to any change whatsoever.

Until recently the methods which have been employed have been entirely artificial, depending on restrictive laws and the liberation of artificially propagated game birds of a few species. The procedure has been by trial and error. But the results of trials were difficult to measure and often were not apparent for a period of several years.

In many cases, a new procedure has been started before the results of the previous trial had been fairly tested. Whenever a downward fluctuation occurred the policies and procedures in vogue at the time were promptly reversed. Little consideration was given to the possibility that fluctuations in natural conditions beyond the control of man might have been an important influence in the results secured.

Many state fish and game departments have been spending thousands of dollars each year raising and liberating literally millions of trout over a period of many years. Not until this Department conducted its trout tagging experiment in 1932 (previously reported) had anyone made any serious effort to determine what happened to trout after they were liberated, how many were caught, what migrations occurred or what methods of distribution produced the best results for the money spent.

Many state game departments likewise have been liberating thousands of pheasants for many years. Some favor their liberation as adults in the spring; others as young birds in the fall, but until recently no serious effort had been made to find out which method produced the best results per dollar expended.

A similar situation exists in the case of nearly every activity of this and of every other state or Federal department concerned with the conservation of wildlife. The lack of knowledge regarding the factors which constitute the essential requirements for the existence of wildlife is appalling.

The most encouraging sign is that this Department and many others recognize this lack of knowledge, frankly admit it and try to correct the situation. The educational program described on page 14 of this report offers a means to that end. The discouraging aspect is the fact that those who are most concerned with the end results of fish or game programs refuse to recognize the need for more knowledge regarding natural forces and relationships and vigorously resist any attempt to apply to the problems of wildlife management the same methods of scientific research which have placed agriculture, forestry, medicine and other professions on a sound scientific basis.

### **The Cooperative Research Program**

The greatest need of the present era in this field is for more reliable information so that the administration of wildlife resources may be placed on a sound and permanent factual basis and lifted from the level of witchcraft to that of a science.

Consequently, the most important and encouraging development of the biennium is the establishment of a cooperative wildlife research program with headquarters at the Connecticut State College, Storrs, Connecticut.

This will not put more pheasants in our back yards tomorrow but it will lead the way to the adoption of thoroughly practical and proven

methods comparable to those which have been adopted in the South where quail have become actually abundant as a result of management practices recommended by Herbert L. Stoddard based on the scientific research which he conducted there.

The Research Program in Connecticut is supported by equal contributions from: (1) The United States Bureau of Biological Survey and the American Wildlife Institute, (2) The State College, and (3) The State Board of Fisheries and Game. The contribution in each case amounts to \$6,000 in cash, equipment or services. We may take pride in the fact that Connecticut was selected on its merits as one of nine states to receive the benefits of this cooperative program.

We may take pride also in the fact that the State College has long recognized the relationship of wildlife to agriculture and forestry and previously had offered training and field work as part of its courses in forestry. That was an important factor in the selection of Connecticut to receive this assistance. Regular courses in wildlife management are now offered to students at the State College. The employment on the faculty and in the extension service of men specially trained in this field is an additional contribution of the State College to the wildlife program in Connecticut.

Although the research activities are of benefit to each of the cooperating groups, the entire program is of the greatest interest and value to this Department. Those who measure benefits only in terms of values received for funds expended may rejoice that the interests of the Department are benefited directly by an expenditure of \$18,000 at a cost of only \$6,000 per year.

The research program has made it possible also to secure assistance from WPA under the sponsorship of this Department to complete and analyze a mass of data which had been collected and filed but never used. The WPA contribution to this program amounts to \$7,526. for the biennium.

The cooperative research program has undertaken the following projects:

1. A study of the cottontail rabbit; its life history, relationships and the factors which limit its increase to the end that a practical program of management may be inaugurated to increase the abundance of this important game species.
2. A study of the relationship between cover types and the relative abundance of the principal species of game in Connecticut to the end that game management practices may be applied to improve the environment for game and for all other species of wildlife.
3. To determine practical methods of using annual and perennial plants for game food and cover.

4. To secure information regarding the factors which limit the abundance of game birds, quadrupeds and fur-bearers in Connecticut. This includes a study of ruffed grouse fluctuations.
5. To establish a cooperative game management area with regulated shooting to serve as a field laboratory and as a demonstration of methods.
6. To determine an accurate method of measuring fluctuations in the game supply by developing a simple technique in compilation of game kill and other data so as to arrive at the facts on which to base needed adjustments of seasons and bag limits.

Already this program has rendered valuable services directly to the Department in many ways, particularly in connection with the establishment of game management practices on the State forests, on Shade Swamp Sanctuary, the Tolland County Public Shooting Ground and on other similar areas.

### Finances

The immediate problems of the Department are concerned mostly with finances. Because we are dealing with living things which are sensitive to the influence of many factors, subject to great fluctuations and always dependent in some degree upon the activities of the Department, the programs which have been inaugurated in the past cannot be halted without serious consequences.

During the previous biennium, appropriations for the Department from general funds were reduced sixty-two per cent below the annual average of the preceding four-year period. During the present biennium, although appropriations were increased, they remained twenty per cent below the level previously established.

The essential activities of the Department have been maintained during this period only by drawing on a fund which, under a previous fiscal policy, had been held in reserve to meet current expenses during periods of low income. Also, by practicing strict economy in all directions, postponing certain essential work which now can be postponed no longer and by a reduction of restocking programs.

The change in fiscal policy was a deliberate one made by the Board on the recommendation of Griffenhagen Associates in 1932, and with the approval of the Legislature which passed a law in 1935 authorizing the Department to borrow from general funds. Consequently, instead of holding in our Department account a so-called reserve fund of about \$90,000 needed to meet expenses during periods of low income, the Board proceeded deliberately to expend this fund over the four-year period of anticipated depression in an effort to maintain the essential features of its program without serious loss.

CONNECTICUT STATE BOARD OF FISHERIES & GAME

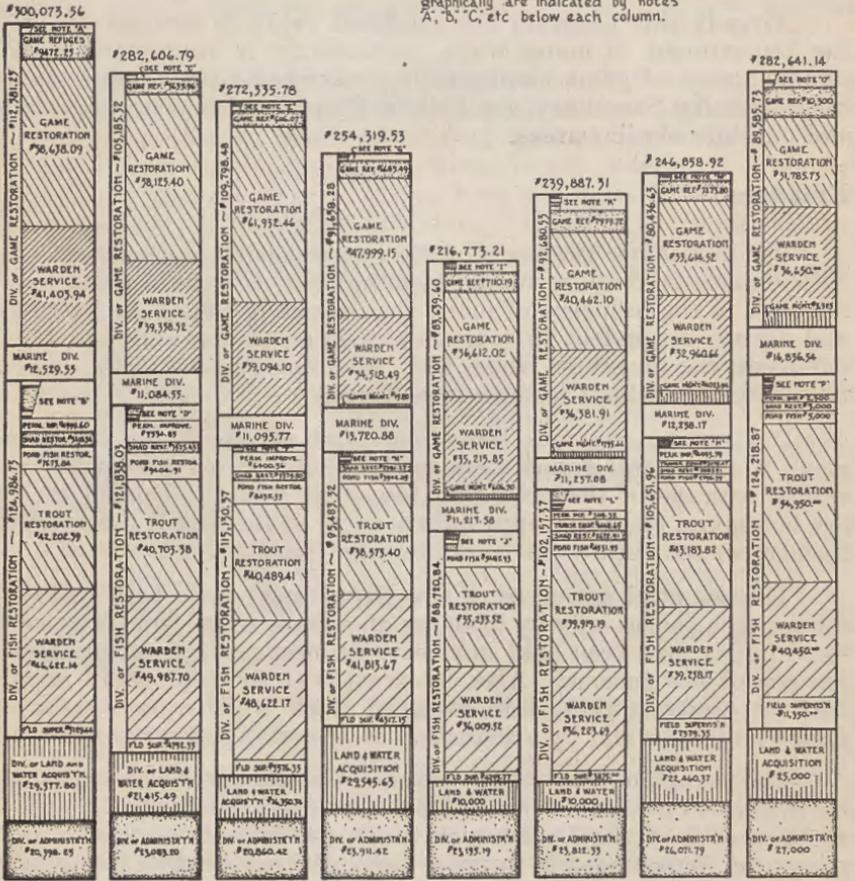
CHART SHOWING

BUDGET EXPENDITURES FOR 1929-30 TO 1935-36 (INCL)

- AND -

BUDGET ALLOCATIONS FOR 1936-37.

NOTE - Subdivisions too small to be shown graphically are indicated by notes A, B, C, etc below each column.



1929-30 EXPEND.    30-31 EXPEND.    31-32 EXPEND.    32-33 EXPEND.    33-34 EXPEND.    34-35 EXPEND.    35-36 EXPEND.    1936-37 BUDGET

Consequently, the total expenditures of the Department during the period from July 1, 1933 to June 30, 1937 will have exceeded the total annual income from all sources by about \$90,000. During the first year of this period the greatest possible economies were made and many activities were curtailed. As the period advanced the need for funds increased to offset the effect of these early economies. Thus during the current fiscal year, the last in the four year period, an expenditure of about \$52,000 from the reserve fund will be made. The balance in the fund will be entirely exhausted by June 30, 1937 according to plan.

The policy of borrowing from general funds is confined to loans within a single fiscal year. The necessity for it is illustrated by the fact that the heaviest expenditures in the Fish Division occur from July to the opening of the fishing season in April. About sixty-two per cent of the funds from license fees allotted to this Division are not paid until April and do not become available to the Department until May, two months before the close of the fiscal year.

However, the trend of fishing license sales is reliably indicated by the thirty-eight per cent which are sold throughout the year and the budget under which the Division operates is subject to revision if necessary, although it is always drawn with a wide margin of safety.

Having changed the fiscal policy in 1932 and having expended the fund according to plan, it is essential that the Legislature grant to the Department authority to continue borrowing from General Funds during periods of low income in anticipation of revenues.

The danger of permitting Departmental activities to lapse because of reduced revenues is that the decline of any species of wildlife is extremely rapid when unfavorable factors occur and that the recovery is always slow, often extending over a period of many years.

During the past decade the program of wildlife restoration in Connecticut has made great progress. In comparison with other states, Connecticut was "at the tail end of the procession" in 1921.\* Now it is recognized as near the top,—one of perhaps half a dozen leaders. That progress and position may be lost quickly if the activities of the Department must continue to be curtailed by reason of inadequate funds. Once gone, the recovery of wildlife resources and of lost opportunities can be accomplished, if at all, only at great expense over a long period of time.

Under these circumstances, it will not be sufficient merely to restore appropriations to their former level. They must be substantially increased in order to overcome the real losses sustained during the past two bienniums.

If the appropriation requested should not be granted, a further reduction in the status of our programs and of our wildlife popula-

\*Report on "The Fish and Game Situation in Connecticut" by F. C. Walcott, Nov. 2, 1921.

tions is inevitable. That would result in further reduction in revenues.

Such a chain of depressing influences, spiraling downward in ever widening circles, would lead quickly to a public demand for closed seasons to prevent the complete extinction of our wildlife resources. It would terminate the sports of hunting and fishing in Connecticut, which now provide the incentive for so many people to find their recreation in the out-of-doors.

The annual appropriations granted for the three previous bienniums, together with the appropriations which we are requesting of the Legislature for the biennium beginning July 1, 1937, are listed below:

	Annual Appropriation 1931-1933	Annual Appropriation 1933-1935	Annual Appropriation 1935-1937	Appropriation Requested 1937-1939
Administration ...	\$23,500	\$	\$13,150	\$ 29,125
Propagation of Fish (Inland) ...	5,000	5,000	5,000	22,500
Propagation of Marine Fishes ..	12,500	10,000	10,000	15,000
Acq. of Fishing & Hunting Rights .	25,000	10,000	25,000	25,000
Protection & Prop- agation of Wild- life .....	....	....	....	3,500
Educational Program .....	....	....	....	10,000
	<u>\$66,000</u>	<u>\$25,000</u>	<u>\$53,150</u>	<u>\$105,125</u>

The source of revenues and the manner in which they have been apportioned to the several interests or divisions of the Department during the two year period July 1, 1934 to June 30, 1936 are shown in graphic form on the opposite page.

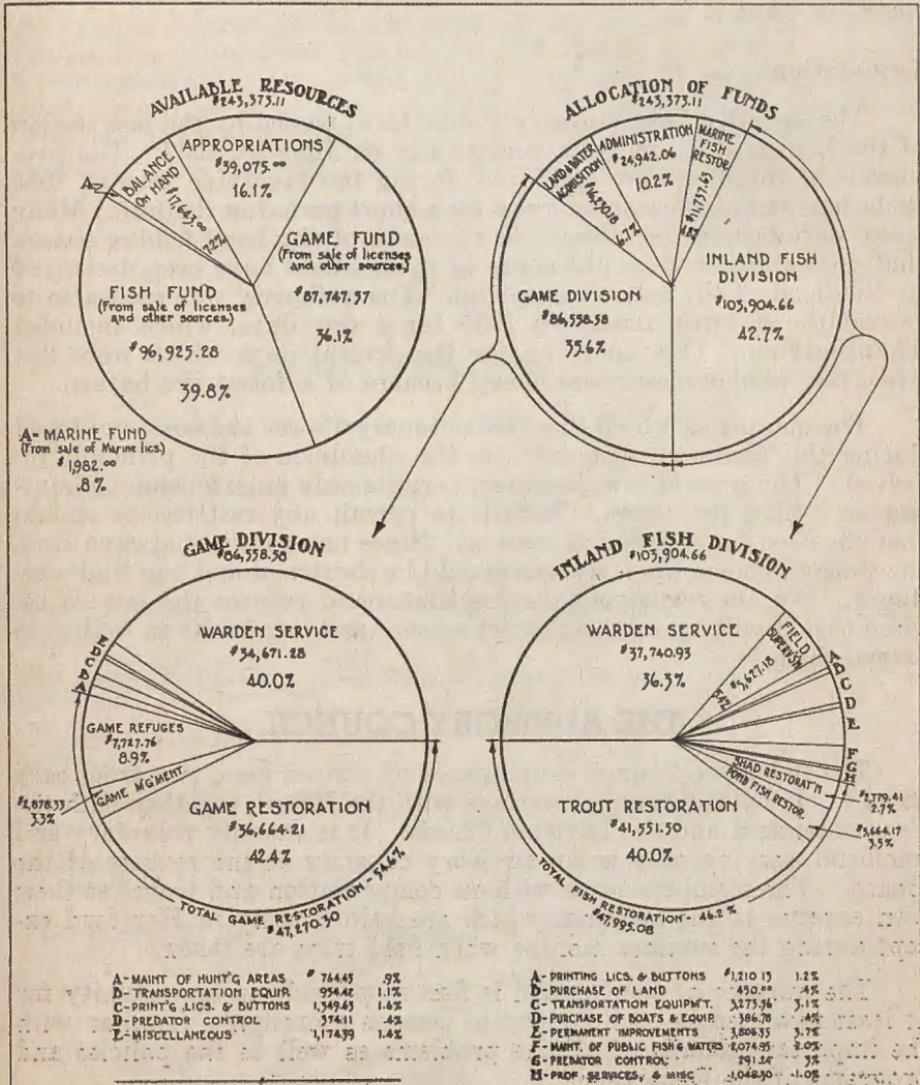
CONNECTICUT STATE BOARD OF FISHERIES AND GAME

CHART SHOWING

AVAILABLE RESOURCES AND EXPENDITURES

JULY 1, 1934 - JUNE 30, 1936.

BASED ON THE AVERAGE OF THE TWO FISCAL YEARS.



## Educational Program

The need is great for appropriations for an educational program. We are constantly requested to supply literature, illustrative material, motion pictures and lectures on the subject of wildlife to Boy and Girl Scout organizations, 4-H clubs, Granges, civic organizations, schools and to many other groups. No facilities for meeting this demand are available. The fact that the demand is increasing demonstrates the aroused general public interest in the subject. The value of such a program to wildlife and to its successful administration has been discussed on page 7.

## Legislation

The so-called Discretionary Power Law, passed by the last session of the Legislature, expires automatically on June 30, 1937. The provisions of this law were employed during the favorable year of 1935 to declare an open season on trout for a short period in the fall. Many trout were left in the streams at the close of the legal fishing season that year and if not caught many of them would have been destroyed by the flood of the following spring. The authority was used also to extend the hunting season in 1935 for a few days, which included Thanksgiving. This made up for the several days which were lost when the regular season was closed because of a forest fire hazard.

The manner in which this Discretionary Power has been employed during this biennium demonstrates the soundness of the principle involved. The present law, however, permits only an extension of hunting or fishing privileges. It fails to permit any restrictions should there be need for shortening seasons. Since nature is not always kind, the time will come when seasons should be shortened and bag limits reduced. We are requesting the Legislature to reenact the law so revised that it will operate to restrict seasons and bag limits as well as to extend them.

## THE ADVISORY COUNCIL

The Advisory Council is composed of sixteen men, two from each county. It holds monthly meetings with the Board, together with the Superintendent and the Division Chiefs. It is entirely voluntary and unofficial, serving only in an advisory capacity at the request of the Board. The members serve without compensation and travel at their own expense to the meetings which are held usually in Hartford except during the summer months when field trips are taken.

The purpose of the Council is first to provide an opportunity for at least two men in each county to become thoroughly familiar with the important details of all the problems as well as the policies and programs of the Department.

The second and major purpose of the Council, although it is dependent on the first, is to provide an opportunity for the Board to

receive the benefit of advice and suggestions from the Council members after they have become familiar with each problem at hand.

The Council was first organized in 1932. The original members were selected by the Commissioners and invited to organize and to meet with them in an advisory capacity. Since that time all vacancies in the Council have been filled by the process of nomination and election by the Council members.

The Council has followed the original policy of the Board which was to select for membership only those who have demonstrated an active public interest in the conservation of wildlife in general and in the welfare of the State as a whole. The Board hopes that organizations representing any of the special or local interests concerned directly or indirectly with the conservation of wildlife will get in touch with the Council members from their County whenever important problems arise with which the Department is properly concerned.

The Board takes this opportunity to express its appreciation of the valuable contributions made by the Council members in giving freely of their time, thoughtful consideration and helpful advice and support.

#### Members of the Advisory Council

Samuel L. Ferguson, Jr., President Canaan	John P. Leonard Avon
W. Lee White, Vice-President Westport	Raymond I. Longley Storrs
Ray E. Benson New Haven	J. Frederick Scholes Essex
Lebbeus Bissell Rockville	Elliot B. Spencer Westbrook
Hon. Curtis P. Brown East Hampton	John S. Stubbs Stamford
Wilfred H. Dresser Hartford	Charles B. H. Vaill Winsted
W. F. Fassett Ansonia	A. L. Weatherhead Willimantic
L. S. Ingalls Danielson	Julian L. Williams Norwich

Miss Mildred K. Bartle acts as Secretary to the Council.

## DIVISION OF ADMINISTRATION

The increasing public interest in wildlife and its conservation has imposed ever greater demands on the administrative and clerical force of the Department. The personnel of this division has not been increased in proportion to the expansion of the Department as a whole. A constant pressure on an inadequate personnel inevitably leads to the postponement of less pressing duties which in the end pile up and cause disaster. An increased expenditure to permit the employment of additional personnel in this division would result in greater efficiency in the field.

The division is composed of a chief and nine clerks whose combined duties include the keeping of all financial records of the Department as well as issuing licenses and handling all correspondence and clerical work. The total expenditures of this division, including salaries for executive and clerical services, the purchase of all office equipment, administrative supplies and expenses, averaged 10.2% of the total expenditures of the entire Department during this biennium.

## DIVISION OF LAND AND WATER ACQUISITION

The actual purchase of lands and waters for the State of Connecticut in the interest of forestry and wildlife, including hunting and fishing, is the function of the Commission of Forests and Wildlife, of which the Commissioners of this Department are members. That procedure has resulted in an excellent coordination of these closely related interests.

This Department purchases land only in special cases such as ponds suitable for fishing which are so located that they do not fit in with the program of the State Forests and Parks Commission.

The principal function of the Division of Land and Water Acquisition is to provide public hunting and fishing opportunities under the program inaugurated in 1925 which has come to be widely known as "The Connecticut Plan". This offered a solution to the problem of posted lands which had reached alarming proportions at that time, due to the abuses which had developed from an unregulated public use of private lands and waters.

Under the original plan, property owners were paid a cash compensation for fishing or hunting rights. The public was permitted to use these lands for fishing or hunting subject to state laws and to regulations of the Board which governed their behavior and gave a measure of protection to the property owners.

Under this program a total of about 150 miles of trout streams and 56,000 acres of public shooting grounds were leased and maintained up to the year 1933 by an annual appropriation of \$25,000.

The plan was revised in 1932 by eliminating the cash compensation feature in acquiring fishing or hunting rights on any new areas

and by establishing regulations which gave the property owners better protection. This plan is entirely cooperative and has resulted in greatly improved relationships between the Department and many rural property owners. Many of these have become actively interested in the improvement of natural conditions in the streams, ponds and game covers which they own.

The economies effected by this plan have resulted in the acquisition of public fishing rights on about 50 miles of trout streams in addition to the streams leased under the original plan. This makes a total of 200 miles of trout streams definitely open to the public for fishing and includes many of the best trout streams in the state. Public hunting rights on 120,000 acres of privately owned land have been acquired in addition to the leased areas which have been reduced to 34,000 acres. The cooperative plan has been applied also to the management of about 49 ponds resulting in the improvement of fishing there as reported on page 28.

All of this has been accomplished during a period of enforced drastic economy at a minimum of cost met by savings effected by abandoning a few of the poorest leased areas, reducing the total from 56,000 acres to 34,000 acres.

The total area in the state which is now definitely open to public shooting subject to regulation by this Department is as follows:

State Leased .....	34,000 acres
(10c per acre per year)	
State Owned Forests .....	67,000 acres
Cooperative .....	120,000 acres
Total .....	<u>221,000 acres</u>

On the basis of 30,000 hunting licenses issued, this makes an average of 7.3 acres per licensed hunter. There is no state in the Union which can offer so large an area per licensed gunner definitely open to public shooting under state supervision and regulation.

This cooperative program offers a practical solution to the problems of many rural property owners who now suffer frequent annoyance and abuse from an unregulated public use of their property and who believe that the State should provide them with reasonable protection. When certain changes have been effected in this division, it will be possible to extend the cooperative regulated shooting plan to include at least 400,000 acres while maintaining 200 miles of leased streams and at least 50 ponds, provided the appropriation of \$25,000 per year is continued.

## DIVISION OF INLAND FISHERIES

The major objective of the Division of Inland Fisheries is to produce good fishing. The methods which are most likely to accomplish this under one condition or with one species do not often apply to other conditions or to other species.

The popular idea is that good fishing is always accomplished by restocking, i. e. by the liberation of more fishes to be caught. Unfortunately that is the procedure which has to be followed in the case of trout, which, under stream conditions obtaining in Connecticut, must be planted to be caught with little regard for natural increase. Consequently the propagation of trout at hatcheries and the liberation of trout in advance of and during the fishing season is a conspicuous activity of the Department which has attracted great public interest.

That is not the procedure which needs to be followed in the case of pond fishes. Because of this difference these two distinct parts of the inland fisheries program are considered separately.

### Trout Restoration

The trout restoration program is largely a case of put and take. Both the "putting" and "taking" are dependent upon the success of propagation at fish hatcheries. The "take" is influenced considerably by conditions on the streams.

The 1935 trout fishing season was satisfactory. The 1936 trout fishing season was probably the most unsatisfactory within the memory of this generation.

The total liberation of trout during these years was as follows:

	Finger- lings	Yearlings		Two Year Olds			Total Weight
		Brook Trout	Rainbow Trout	Brook Trout	Brown Trout	Rainbow Trout	
1935	248,192	83,887	14,000	1,727	25,020	30,157	61,093 lbs.
1936	234,794	62,893	1,743	1,615	29,771	30,466	54,273 "

The reduction in the number of yearling brook trout in 1936 does not account for the poor fishing. Streams which were stocked only with two year old brown or rainbow trout, which were planted in 1936 in larger numbers than in 1935, were no exception to the rule. Fishing was poor in all streams. It is doubtful if the liberation of many more trout would have affected the result.

Thus the 1936 season seems to call attention to the general lack of knowledge about the habits, reactions and requirements of fishes as well as to the limitations of the anglers' skill when fishes are "off their feed".

There is no satisfactory explanation for the poor results in 1936. Many factors were involved, and there is no one answer to the problem. Similar conditions obtained generally throughout the north-

eastern states. The following explanation of some of the causes is offered for whatever it may be worth:

An extreme drought occurred during the summer of 1935; less than the normal flow of water was in the streams during the subsequent winter months. Consequently, an unusual amount of anchor ice formed on the rocks during the extremely cold and severe winter. An abrupt change of temperature caused a melting of the anchor ice with heaving and loosening of rocks. The quick thaw, followed by excessive rainfall was also responsible for two stages of extreme floods which promptly followed in March, 1936. All stream beds were literally scoured clean with rushing water and with rolling rocks which had been loosened previously by the action of quickly melting anchor ice. The natural food supply in all streams was largely destroyed.

Following the flood, water and air temperatures continued low during April and part of May. Then a sudden change occurred with high temperatures and rapidly declining flow of water, which reached near drought proportions. High temperatures and low water conditions continued through the season.

It is well known that trout do not feed regularly by the clock or by the calendar day as do humans. During the winter months, trout in cold waters become partially dormant. All of their body functions slow down, and since they expend little energy, they require little food. During the summer months, trout do not feed if they are confined in pools where water temperatures are uncomfortably high. Unlike humans, they can live for long periods of time with little or no food. If they feel hunger, as we know it, they do not respond to it if water temperatures and other conditions are unfavorable.

During the season of 1936, very few hatches of natural flies were observed. That supports the observation that natural food in the streams was scarce. Water conditions during most of the season were unfavorable for inducing trout to feed. Consequently, there were many occasions when they would not take even live bait offered to them. All of these observations indicate generally unfavorable conditions.

As the season advanced, especially during the low warm water period in June and July, an increasing number of trout were found dead or dying in the streams. Apparently there was no relationship between the planting of trout and the death of trout. Some of these trout, but not all, were found to be diseased. But there was no unusual loss of trout in our hatcheries and no evidence of disease during this period. When rains occurred again, the losses stopped abruptly. We believe that the death of trout by disease and by other causes was merely the result of unfavorable conditions in the streams.

To make the record of this interesting but disappointing season complete, it should be recorded that the distribution of trout had been delayed because of a late season. Consequently, no trout had been planted in the streams previous to the flood. The hatcheries were not affected by the flood. The distribution of trout got under way (in the southern counties) one full month behind schedule.



Planting trout in white water Farmington River,  
West Branch. May 2, 1935.



Planting trout by boat in otherwise inaccessible portion  
of the Housatonic River. May, 1936.



Planting trout in high water. Natchaug River.  
March 23, 1935.

By strenuous effort and the use of additional trucks, the loss of time had nearly been made up before the season opened. It was announced that all leased streams would be stocked before April 15th. After that announcement had been made, a three day period of heavy rain again delayed the distribution, with the result that a few streams were not stocked in advance of the opening day. The fishermen who elected to fish those streams were disappointed. But those who had fished the streams which had been stocked fared little better.

The distribution continued through the season, ending on schedule about June 15th. But the fishing did not improve.

An explanation of the reduction in the number of yearling brook trout planted in 1936 is in order also, to make this record complete.

### **Burlington Hatchery**

The Burlington Hatchery was built in 1924. Wooden pipes, buried in the ground, were used to conduct water from the springs to the hatchery proper and to the rearing pools below. The job was done by contract and should have been good for at least twenty-five to thirty years.

During the first year of this biennium, suspicion arose that the water supply was leaking underground. No map or plan showing the springs or the arrangement of underground pipes was on hand. No record of the flow of water when the system was installed was available for comparison with the present flow. No one now connected with the fisheries division or with the Department in an executive capacity had been employed during the time that the water system at the Burlington Hatchery was installed.

During the summer of 1935, work was begun uncovering old pipes to investigate the suspected leaks. The pipes were found to be in bad condition and copper sulphate was used to clean them. While this work was going on, a heavy rain occurred late in October. Simultaneously, trout began to die in all the pools below the hatchery proper. Efforts to move trout still alive to other waters resulted in hastening their death. Within a period of forty-eight hours, 100,000 trout were lost. The hatchery proper was practically cleaned out.

The State Water Commission responded at once to our request for assistance in determining the cause of the loss. Specimens of dead trout were rushed to several authorities. Many experts rendered valuable cooperation in examining samples of water. The reports on all of these investigations are on record. In brief, they show that the loss of trout was not caused by the copper sulphate but by an acid condition of the water.

The real cause of acidity became apparent when extra help was employed to dig up the entire water system above the hatchery proper. It was found that the wooden pipes had not been joined properly in many places and that some sections had become broken or decayed. Roots of trees were found actually growing in and clogging some of the pipes. The entire system leaked profusely. Good spring water

not only leaked out, but surface water, seeping through an acid soil, leaked into the system to mix with a diminishing supply of spring water.

The rain, which occurred just before the loss, seeped through recently fallen leaves, partially decayed, absorbing the acidity, and adding it to the water supply. Thus, briefly, the cause of the loss of trout at the Burlington Hatchery late in October, 1935, was a failure of the water supply in quantity and in quality.

The loss was announced immediately by the Board. It was stated also that the loss would be spread over a period of two years since many of the trout were fingerlings intended to be reared and planted as two-year olds. It was announced, therefore, that trout would be purchased to bring the distribution in 1936 up to the level of the previous year so that the fishing season would not be affected.

That estimate was made on the basis of the foreman's records of trout in the pools at Punch Brook and Cherry Park rearing stations which were not affected by the losses. These records could not be checked until the ponds were drawn the following spring.

These ponds were the last to be drained in connection with the distribution of trout to the streams. When drained, an unexpected shortage was found, as recorded on Page 18. This shortage in yearling brook trout, however, cannot account for the poor fishing season of 1936.

A total of 7,540 two-year old brown trout weighing 3,238 lbs. were purchased from commercial hatcheries at a cost of \$1,998.00 in order to bring the distribution of trout for 1936 up to the level of the previous year. That objective was not accomplished because of the subsequent loss or disappearance of yearling brook trout although the number and weight of all two-year old trout was greater than in 1935.

The entire water supply system leading to the Burlington Hatchery proper has been rebuilt with iron pipes. The flow from each spring is piped directly to the main which avoids any possibility of leakage or seepage now or in the future. This was completed before eggs were received for hatching during the winter of 1935-1936. The hatch and growth of trout has been substantially increased by the improved water supply.

An engineering plan of the layout is on file in triplicate. A system of keeping daily temperatures and measurements of flow and periodic tests of water quality has been inaugurated. The installation of new pipes leading from the hatchery proper to the rearing pools below, together with a new, separate sewage system is under way.

In addition to improvement of the water supply at the Burlington Hatchery, two new circular ponds for holding trout in preparation for their distribution, and two large pond-fish rearing ponds have been built by labor furnished by the transient camp which was located on the Nepaug State Forest, of which the hatchery grounds are a

part. It is unfortunate that this camp had to be abandoned on September 1, 1936. Other incidental improvements have been made to the hatchery grounds by this labor. All of the improvements have been made under the direction and supervision of Eben W. Cobb.

### **Kensington Hatchery**

This hatchery is in excellent condition and produces our finest rainbow trout, under the foremanship of Edward H. Reeve. The hatchery has been improved by the construction of a road leading around the ponds by the Civilian Conservation Corps. A residence for the foreman was also built with the help of labor and funds furnished by F. E. R. A.

Experiments in rearing black bass in circular ponds, using only artificial food, have been conducted in this hatchery during this biennium. The experiments have been successful in demonstrating the fact that live food (*Daphnia*, etc.), is not essential for starting or rearing bass. Further information is available on request. It is not our intention, however, to undertake the propagation of bass on a large scale because of the excellent results which are being secured by the establishment of protected spawning areas and by other natural management methods.

### **Windsor Locks Hatchery**

This is the oldest hatchery in Connecticut still in operation. It is suffering from its age and a reduced water supply. It is an excellent example of how not to build a hatchery. However, its production is sufficient to justify its continued operation for the present. Because of the investment which has been made there and because of the expense of establishing a new hatchery in a new location, there is further justification for its continuance.

### **Rainbow Trout**

During the biennium, the Department continued experimenting with the introduction of rainbow trout in streams and ponds. Little definite information is available regarding the adaptability of rainbow trout to eastern waters.

An interesting demonstration of the well known fact that the Department cannot please everyone, no matter what it does, was found in our experience with rainbow trout. In 1935, rainbow trout were planted in the upper section of the Housatonic River, above Kent. Rainbow trout were also planted for the first time in the section below New Milford which previously had not been stocked or recognized as suitable trout waters. That year, many anglers complained about the introduction of rainbows in the upper section which previously had been planted only with brown trout and a few brook trout. The rainbows did well in the lower section, and served to make available several additional miles of big water. Those who fished that section were pleased.

Our observations of results indicated that the lower section was better adapted for rainbows than the upper section. Consequently, in 1936, rainbow trout were stocked only in the lower section. However, the total number of brown and brook trout planted in the upper section was equal to or greater than the total number of all trout planted there the previous year. Immediately a great wail was heard because no rainbows were planted in the upper section. Rainbow trout had never been planted in that section except during one season, but a precedent had been established; the Department was falling down!

A similar complaint was heard when the Department planted rainbow trout in certain ponds as part of our experiments with this little known fish in eastern waters. As it has worked out, a relatively small number of rainbow trout planted in a suitable pond, will provide more sport for a larger number of fishermen than many times that number of trout planted in a stream.

We have noticed that the license numbers checked on rainbow trout ponds are mostly those which are checked also on streams. Perhaps the program of planting some rainbow trout in suitable ponds offers a means of relieving the congestion on some of the heavily fished streams.

No one knows what proportion of all the license holders fish for trout. We estimate that it is not over 60%. Of the funds available for inland fisheries (\$47,995.00), the trout program is allotted \$41,551.00 or 86.5%, the pond fish program is allotted \$3,664.00 or 7.6%.

See Chart on page 13.

The Department intends to balance the program by continuing to plant suitable ponds with rainbow trout and by giving more attention to pond fishes.

### **Stream Improvement**

The encroachment of civilization resulting in the destruction of favorable natural stream conditions has made trout restoration in Connecticut both difficult and costly. Our records indicate that approximately fifty per cent of the trout liberated are lost between fishing seasons. From this it seems clear that part of our trout restoration program should be devoted to improving stream conditions so that more trout will be held over from year to year.

During the past four years the Department has directed a number of stream improvement experiments in the State-owned portions of a number of streams. The numerous devices installed have met with varying success but all have contributed to a general knowledge of the method necessary for use in Connecticut streams.

During this biennium a technique developed by Emerson W. James was used with gratifying success. These substantial devices



The Salmon River as the C.C.C. begins construction of a V-dam. September 23, 1935.



The V-dam nearly completed by a crew of twelve men and one foreman. October 25, 1935.



The effect of stream improvement following a rain. The V-dam digs a hole and makes white water. November 29, 1935.

are essentially variations of the rock-filled log crib. Each construction is designed to improve the conditions which obtain in each location such as narrowing and speeding the current during low-water periods, forming pools, feeding areas or trout refuges and stopping erosion.

In the fall of 1935 three of these devices were completed in the Salmon River as a test of this new method. The construction withstood the high water which prevailed in March of 1936 and at the same time caused the desired changes in the stream bed. About 850 man days were expended by the Civilian Conservation Corps in building the structures.

On the strength of this test, the Civilian Conservation Corps improved over one mile of the State-controlled portion of the Blackledge River in 1936, using constructions similar to those placed in the Salmon River. In this improved area 41 structures were built and 300 white willows were planted by an expended effort of 3391 man days and at a cost of \$723.18 for material.

The Civilian Conservation Corps is to be commended for the improvements made in our public fishing waters. It is hoped that this phase of the trout restoration program may be continued and expanded.

It is hoped also that the improvements made to the Blackledge and Salmon Rivers may serve as a demonstration of what may be accomplished on smaller streams by interested sportsmen. In anticipation of requests, the State Board of Fisheries and Game is prepared to furnish advice and supervision to any group interested in improving the natural conditions in suitable open streams.

### Dams On Trout Streams

Many trout streams have been injured by the construction of dams which impound water over marsh areas causing an acid condition and raising the temperature of the stream below. This is a significant factor in trout restoration since even the artificial methods necessary to provide trout fishing in Connecticut depend finally upon favorable, natural stream conditions. Trout can accept no substitute for cool, clean water.

There is an increasing tendency among wealthy persons, frequently from out-of-State, to acquire property on our small feeder brooks. They usually desire to create a small pond for swimming or fishing purposes, or both. Since these small brooks often contain trout, the new owner believes that all that is necessary to provide good trout fishing is to dam the brook and stock the pond with trout. This procedure often provides some results for a short period of time. Finally, however, the decomposition of vegetable matter under water gives rise to an acid condition so unfavorable that trout placed in the pond either die or leave. The pond is of no further use for trout.

In the meantime, the warm, acid pond water has made the stream below uninhabitable for trout since any trout stream is only so good as the sum of its feeder brooks. Any destruction of feeder brooks by dam construction will have a direct and unfavorable effect on our trout fishing.

In some cases there are spawning areas above such ponds which might well be used if these small dams were provided with a fishway so as to permit trout to pass up and down the stream.

Fortunately, wise legislation has been enacted forbidding the obstruction of any stream, unless specifically authorized by the State Board of Fisheries and Game (Section 3228 of the General Statutes). It is the intention of the Board to prevent further destruction of our trout streams in this manner by a strict enforcement of this law.

### **Pollution**

The industrialization of Connecticut with its attendant pollution of our waterways has been of major importance in the destruction of the natural stream conditions which are essential for the existence of fish life.

The State Water Commission has prevented any new pollution from contaminating our streams and has made notable progress in eliminating established sources of pollution which is even more difficult.

Eventually many additional miles of streams will be reclaimed and again made suitable for recreational use. The great benefits derived by sportsmen and nature lovers from the work of the State Water Commission should be recognized and acknowledged.

### **Pond Fish Restoration**

The problem with pond fishes is radically different from that of trout. The increase of pond fishes by natural propagation is not only possible, but it has always been the most important factor in contributing to the results of the fishing season.

A fish truck delivering pond fishes for planting in a pond amounts to little more than a frank admission that those waters have been grossly abused and mismanaged. If the pond has been placed under management with the establishment of protected spawning areas, the planting of fish is justifiable as an effort to re-establish a depleted supply. Once a breeding stock has been established, that pond should not require further restocking so long as it is properly managed, which includes a regulation of fishing.

Fishes must be considered a crop of the waters just as game is a crop of the land. Each area of water is capable of producing a certain crop, depending on many factors which make up the environment. Each pond must be managed as a unit which may require

treatment unlike any other pond. This can be accomplished by establishing special regulations for each pond. These may consist only of establishing spawning areas where no fishing is permitted until well after the spawning season. In each case the area set aside or the pond as a whole is carefully posted with the regulations which apply thereto. So far as possible the regulations which govern fishing are standardized for all ponds of similar character.

### Regulated Fishing

The program of cooperative regulated fishing started in 1932 as a revision of the original Connecticut Plan, has been steadily expanding. At present forty-nine ponds and lakes are open to regulated public use. The success of the plan is shown by the many favorable comments from anglers and from the owners of ponds now under regulations. There is an increasing demand from riparian owners for regulated public use of the ponds where they own property.

Each of these regulated ponds is managed according to its individual needs, as is indicated by careful observation and study. Under the free permit system which is employed in many ponds, accurate records of the annual catch are kept which point the way to future management policies.

These management programs have not, as yet, been in effect long enough to have produced vastly better fishing. However, our records indicate a definite trend toward improvement, both in numbers and size of fishes taken. This is most noticeable in the case of black bass and pickerel,—two species difficult to increase by artificial methods.

### Bait Fishes

The term "bait fishes" or "forage fishes" is commonly used to designate in the aggregate a number of species of minnows, dace or shiners which are all too often regarded as insignificant due probably to their small size and retiring mode of life. This impression of their unimportance is entirely erroneous.

All bodies of water contain various inorganic substances in solution which support a vast number of minute plants. These plants are eaten by equally small animals. This plankton, as the plants and animals are called, is the basic food supply and the degree to which it is present and available to the larger inhabitants determines the productivity of the body of water.

The plankton, because of its small size, can only be made available to the adult game fishes by an intermediate form. Forage fishes are especially equipped to use a large percentage of plankton in their diet and when these fishes are in turn devoured, this great basic food supply has been made available to the game fishes. There are other intermediate forms which are fed upon by game fishes, but forage

fishes because of their size, prolific habits and adaptability are most important and essential to the production of good fishing.

This is especially true in the many ponds and lakes where favorable natural conditions render the planting of artificially propagated adult fishes uneconomical and unnecessary.

Unfortunately, a disregard of the essential need for forage fishes has permitted their removal from many of our lakes, ponds and streams for use as bait. This unwarranted practice has undoubtedly lowered the potential productivity of many of our ponds and lakes. It is false economy for anglers who are interested in the welfare of their sport to secure bait fishes from fishing waters or to encourage this practice by patronizing bait dealers who have no visible means of actually producing by hatchery methods the bait they offer for sale.

The State Board of Fisheries and Game is fully aware of the importance of forage fishes to game fish production and of the anglers' need for a constant supply of good bait.

During this biennium 371, 277 bait or forage fishes have been liberated in public fishing waters where the need for more of such species has been indicated. This important phase of the pond fish restoration program will be continued as facilities are made available.

An increasing number of commercial hatcheries for the propagation of forage fishes are being registered. These men are being encouraged and aided by suggestions and advice in their efforts to produce bait. By proper selection of breeding stock, these hatcheries will be able to produce a superior minnow for angling purposes and without damage to our public fishing waters.

By a careful inspection of all institutions registered for the purpose of producing bait and by tracing the origin of all bait offered for sale, it is hoped to stop the removal of large quantities of bait from fishing waters. This reform can be aided if every purchaser will buy only bait acquired in a legitimate manner.

## **DIVISION OF COMMERCIAL AND MARINE FISHERIES**

### **Lobsters**

From the Marine Hatchery at Noank, a total of 492,712 lobsters of the fourth, or diving stage were reared and liberated in 1935. During the season of 1936, the output of this hatchery was increased by 16,288 fourth stage lobsters, making a total of 509,000 liberated that year.

The increase in 1936 was made possible because of the complete cooperation of practically all commercial lobstermen along the Connecticut coast who supplied egg bearing lobsters for this work and because of certain improvements which were made in rearing methods.

The commercial lobstermen cooperated also in liberating most of the fourth stage lobsters reared. They report observing more young lobsters during the season of 1936 than during any previous year, which fact offers encouraging prospects for the future.

### Flatfish or Flounders

Because of the low prices paid for flounders in 1936, many of the flounder draggers placed their boats out of commission and entered into some other field of activity.

A total of 98,815,000 flatfish fry were released in 1935. The recent decrease in the amount of flounder fishing is reflected in the records for 1936 which show a liberation of only 19,800,000 fry.

The largest catches of flounders are taken during their spawning season and since these fish are not protected by any laws, the propagation of flatfish at our Marine Hatchery is particularly important. We have received reports from many commercial fishermen, who are keen observers; that many small flat fish may be seen in the bays and coves along our coast. They state that these conditions did not obtain prior to the release of flatfish fry along the coast.

### Smelt

The propagation of smelt continues at Westport and Noank with a gradual falling off of eggs and smelt taken each year. The liberation in 1935 was 52,007,000. In 1936, it dropped to 27,100,000 because eggs were not available. The reduction in the number of smelt and in the number of eggs taken appears to be due to the fact that during the period of their migration in the fall, large schools of bluefish, which are highly predacious, inhabit the water from Cape Cod to Montauk Point.

### Shad

The run of shad in the Connecticut River during the spring of 1936 appeared to be about the same as during the previous spring although they did not enter the Salmon River in as large numbers as in 1935. Consequently, only 8,894,000 fry were released in 1936 as compared with the 18,522,000 released in 1935.

The failure of many shad to enter the Salmon River in 1936 may be due to the fact that many of the tributaries which are polluted had been thoroughly cleaned by the flood so that shad entered these tributaries for spawning for the first time in many years. Because of the cleansing effect of flood waters the difference in the Connecticut River water and the clear unpolluted waters of the Salmon River was so slight that shad were not diverted to the cleaner stream in as great numbers as they have been in recent years.

Hauling seine for the striped bass investigation. Each bass will be measured and tagged and will have a scale sample removed before being released.



Photomicrograph of posterior section of scale from striped bass captured during its fourth summer. The age is determined by the winter marks or annuli as indicated.

Red celluloid numbered tags bearing the name and address of the Department are fastened to the back of each striped bass before being released.



## Striped Bass

The striped bass is one of the most important of our natural resources. Formerly, it was so abundant in the Connecticut River and in many other waters in the state that it supported an important commercial fishery. The records of catches over a period of years show a steady decline in both size and number. For many years, the striped bass has been so scarce in Connecticut that its commercial value has been negligible. In the Niantic River alone it has been found in sufficient numbers to provide excellent sport and to gain great popularity as a game fish.

The State Board of Fisheries and Game has been anxious to give the striped bass whatever protection and help might be needed, at least to maintain this sporting fish in the Niantic River and if possible to increase its numbers and to extend its range. However, because of its migratory habits, it would be futile to establish length or catch limits in the Niantic River so long as other states on the Atlantic coast permit great numbers of bass to be taken without restraint. There is no uniformity of laws and no agreement as to the methods which might be effective in protecting or increasing the striped bass. In fact there is little reliable information regarding its migrations or other habits. Not even the locations of important spawning areas are known.

Under the circumstances, it was obvious to the Board that the greatest need was for information regarding the life history and habits of the striped bass which might lead to uniform restrictive laws and possibly to some constructive measures to be adopted by all of the Atlantic coast states.

The United States Bureau of Fisheries was unable to supply any information or to offer any help. Consequently, this Department started an investigation in an effort to determine, at least the essential factors regarding the migratory and spawning habits of this fish and its requirements for existence. Such information is essential before a sound program can be adopted. The Board was prompted also by the hope that the investigation would encourage similar efforts in other states and would lead to the adoption of a cooperative program by all of the Atlantic coast states together with the U. S. Bureau of Fisheries.

The striped bass investigation was begun on April 1, 1936, with Daniel Merriman in charge. Since Department funds were not available to start the investigation until July 1, 1936, a volunteer committee of striped bass anglers was organized which succeeded in raising the funds necessary to carry on the work for the first three months' period. The cooperation of that committee and of the individuals and fishing tackle manufacturers who contributed to the fund is gratefully acknowledged.

It happened that in 1936 striped bass appeared in all suitable waters along the Atlantic coast in greater numbers than for many years previously. The vast majority of these bass were of one age group (two-year olds). Their abundance indicates an unusually successful spawning season two years ago. The favorable conditions which were responsible for this success are not known since their spawning grounds have not been located. The conditions which obtained this year were helpful to the investigation since a wealth of material for tagging and age determination was available.

The future of striped bass remains endangered, the more so perhaps because their abundance this year tends to create an unwarranted impression that their numbers cannot be exhausted and that good crops in future years will follow along as a matter of course.

However, the records secured indicate that at least 25% of this age group has been taken during this year. Since it is highly probable that bass do not spawn until they are four years old, if the catch of the two-year old group continues at the present rate, their numbers will be seriously depleted before reproduction can be accomplished two years hence. The records which are available show that in the past sharp increases in numbers, such as was experienced this year, have been followed invariably by an equally sharp decline and period of scarcity.

A report of progress covering the work of the first three months of the investigation was issued in July, 1936. A more complete report will be prepared and issued at the end of the year. The progress which has been made has fully justified the small expense involved and clearly indicates the importance of continuing the investigation and of extending it to include the natural range of striped bass. That cannot be undertaken until funds from sources outside of Connecticut are made available for the work. The problem of restoring striped bass to its former abundance must be recognized as an obligation of the Federal Government and of all the Atlantic coast states from the Gulf of St. Lawrence to Florida.

## DIVISION OF GAME RESTORATION

Game is a crop of the land, a product of environment. It is subject to fluctuations caused by many factors. When several unfavorable factors are in operation simultaneously, the fluctuation become more pronounced and violent.

The progress of game restoration in this country has been slow because until recently little reliable information has been available regarding the environmental factors which are required for the normal existence of any species of game or regarding practical methods of improving environments for game. The exception is in the case of bobwhite quail which have become actually abundant on many preserves in the South by the application of game management practices

based on the results of many years of field study and research by Herbert L. Stoddard.

In the northern zone, ruffed grouse have received similar attention, first by Dr. Arthur A. Allen, and later by Gardiner Bump, both in New York, Dr. R. C. Greene and Ralph King in Minnesota and Dr. C. H. D. Clarke in Ontario. Dr. P. L. Errington has done some excellent work on quail in northern Iowa. Professor H. M. Wight has made extensive studies of pheasants in Michigan. In that work, he was assisted by Dr. Paul Dalke and by Dr. P. F. English, both of whom are now connected with the State College at Storrs. In most cases, however, these studies are incomplete and the management practices which have been developed and proven successful in one area are not applicable in other areas without modifications which can be determined only by further experimentation.

Studies of other species have just begun and for all species, there is little more than a recognition of the need for further study to the end that the trial and error methods of the past and present may be replaced by procedures based on a working knowledge of the factors involved in the problem.

For the present, we must be content to explain fluctuations on the basis of "favorable" or "unfavorable" natural conditions, without defining those conditions. We must also make use of whatever reliable information has been made available in an effort to recognize the factors involved and to influence those which are subject to some control.

### Probable Factors

#### 1. *Weather*

During the winter months, the extent of ice, sleet and snow,—its depth and duration,—are important factors which affect the winter food supply and the vitality of the stock. The harmful effect of these factors may be overcome partially by winter feeding. But unless feeding stations are properly established and carefully tended, they may do more harm than good. As game birds are attracted to the feeding station by grain, so predators are attracted to the same location by the frequent presence of the birds. Overfeeding tends to make birds less active and more subject to loss by predators and by disease. The most critical period often occurs between the end of the winter, even after snow is gone, and the time when a new supply of natural food becomes available.

Between the mating and nesting season, cold or excessive rains may affect reproduction. During the hatching and rearing season, excessive rains or drought may kill the young. Weather conditions also influence the growth of vegetation which affects cover and feed. The first killing frost determines the date of falling leaves and affects the results of the hunting season, making it favorable or unfavorable for the hunter.

Data regarding all of these factors are being compiled by the Cooperative Research Program from the records of the United States Weather Bureau and other sources. They are being correlated with the records of the annual crops of game as determined by the results of corresponding hunting seasons. Thus, the influence of weather conditions may be better understood and may be used as a basis for estimating the results from natural propagation during any year. Although other factors must be considered, it is by such methods that open seasons and bag limits may be regulated more intelligently in the future with knowledge of the crop which may be taken or harvested safely without depleting the future supply.

## 2. *Food and Cover*

The abundance of food and protective cover varies from year to year and influences the supply of game. The game carrying capacity of a range may be increased by a slight modification of farm and forestry practices. The importance of dairying in this state results in much overgrazing which destroys food and cover for game. It is perhaps the most important factor limiting the supply of pheasants. We cannot ask the farmer to give up dairying but we can interest him in the problem and secure his cooperation in permitting us to fence off small corners and steep banks where food and cover for game may grow without interfering with grazing. On steep banks and gulleys the growth of vegetation protected by fencing also will prevent harmful erosion.

## 3. *Predators*

The control of predators is important, but there is often a danger of unwise and excessive control. A game breeder in Connecticut killed thirty seven great-horned owls in one year. The following year his farm was so over-run with skunks that many nests were destroyed and the crop from natural propagation was seriously affected.

A gamekeeper on a private preserve practically eliminated foxes from the area. He also planted at great expense a quantity of food-bearing shrubs and conifers for cover. Two years later, rodents (mice) had increased to such an extent that most of the newly planted shrubs had been killed by girdling. Many native shrubs as well as a small orchard had been injured or killed also. The food supply for game and the carrying capacity of the preserve was less than when the project started.

When predators become too abundant as foxes and skunks have become in many areas during this biennium, they must be controlled. A balance must be restored. The difficulty is that no one yet knows what constitutes a balance. While waiting for more information, we must continue doing the best we can by the trial and error method and by avoiding carrying a good work to a harmful extreme.

#### 4. *Cycles and Diseases*

Many species of wildlife are subject to periodic fluctuations or cycles which occur at regular intervals. Following a peak of abundance, a rapid decline occurs which is usually associated with disease. It is possible that the occurrence of disease may be the effect of certain causes which are little understood. The cycles seem to correspond with certain definite variations in the number of spots on the sun, which may be a coincidence or which may suggest how little we know of the intricate system of relationships and balances around which this universe revolves. Cycles are not controlled but their effects may be influenced by closed seasons during low periods in order to conserve as much breeding stock as possible. That should result in a more rapid increase after the process of evolution has accomplished a survival of the fittest.

#### 5. *Inherited Factors*

Little attention has been given to the vitality of game birds such as pheasants and quail reared on game farms or to their adaptability to the environment where they are liberated. There is some reason to believe that game farm methods circumvent the influence of evolution and lead to a deterioration of the stock liberated. This might be overcome by giving careful attention to the introduction of new stock, preferably wild stock, trapped in a distant area. More information derived from actual field tests is urgently needed on this point.

It is well known that each species has a natural range, beyond which it does not thrive. White hares and paper birch for example, are characteristic of the north woods. Both are found in rather limited areas in certain parts of Connecticut, but neither do more than barely maintain their numbers in this, the southern limit of their natural range.

By the same token, there is no reason to expect bobwhite quail imported from the south to thrive in this, the northern limit of their natural range. Only a strain of northern quail made hardy by generations of selective breeding can possibly exist here.

It is possible that the strain of game farm pheasants which have been liberated in the east are not adapted to the environment which obtains here. Certainly it appears that they do not thrive as well as they do in states to the west, particularly in the Dakotas. It may be that some of the 23 sub-species of pheasants which are native to China and Asia might be better adapted to the conditions in Connecticut than are the mongrel strains of domestic pheasants which we have been using. There is need for serious consideration of that subject and of careful experimentation.

#### 6. *Shooting*

The influence of shooting unless carried to excess is not an important factor during the upswing of a cycle or when conditions

are favorable for natural increase. During such periods shooting may be a help in reducing the population and in scattering game so that when an epidemic disease breaks out, its spread may be checked and the decline less rapid.

Under unfavorable conditions, shooting may become a most important factor since the gun is unable to distinguish or select the specimens which would survive to constitute the future breeding stock.

Unfavorable results from shooting are reduced to a minimum on managed areas where the annual kill of any species is limited to the number which represents the surplus crop with allowances for inevitable natural losses. Thus, a knowledge of the status of each species and of the factors which constitute favorable or unfavorable seasons is essential for an intelligent administration of wildlife resources in order to restrict shooting when that is necessary and to extend seasons and bag limits at the proper time.

### Practical Solutions

In the past, we have depended entirely upon artificial methods—restrictive legislation and restocking. Neither method, either separately or jointly, has accomplished more than a delay in depletion, at an ever increasing cost. They have served only to demonstrate the futility of man's efforts to employ artificial methods to solve a problem which is influenced by natural forces beyond his control or understanding.

The game crop must be managed as other crops of the land are managed. Fluctuations in game crops may be influenced by giving attention to the following controllable factors:

1. *The regulation of seasons and bag limits determined by an estimate of the annual crop.* The discretionary power which has been given to the Board makes it possible to fix seasons and bag limits on the basis of the estimated stock on hand. Such seasons and bag limits must apply to the state as a whole. The regulated shooting plan makes it possible to establish special seasons and bag limits on small areas where the stock of game and the safe kill may be quite different from that of the state as a whole.
2. *Control of predators to maintain a balance.* The practical difficulty is that the need for predator control is not uniform throughout the state. The aim should be to establish a balance but until the relationships between species are better understood so that we may know what constitutes a proper balance, the work of predator control should proceed with caution.
3. *Restocking* When breeding stock has become established on any area, the annual crop should keep it stocked to its seasonal capacity provided the area is properly managed. The carrying capacity will vary from year to year. It can be increased by improving the environment. Additional stocking will not affect

the population except temporarily. If breeding stock cannot be established, the species is not adaptable to the environment.

The ruffed grouse is an example of a species which is well adapted to the conditions which obtain over a large part of the rural area in Connecticut. The wooded area of the state has increased from 1,483,300 acres—46.4% of the total area of the state in 1914—to 1,789,000 acres or 56% of the total area in 1934. As the wooded area increases the status of ruffed grouse as a game bird assumes greater importance. This native bird has survived and increased although none has ever been stocked and little attention or help has ever been given to the species. Pheasants and quail are examples of species which have become depleted by changes in farming practices and misdirected efforts to increase the supply. The liberation of any bundle of feathers resembling any kind of quail without regard to vitality or to its adaptability to environment has been an important factor leading to the depletion of the original native stock of quail which formerly survived hard winters and thrived in Connecticut. A similar disregard of quality and adaptability in pheasants has probably been one of the limiting factors in establishing that species in Connecticut.

A slight modification of farm and forestry practices to improve the food and protective cover conditions for game will result in an extensive increase in game at a minimum of cost. That is the only known method of helping directly the status of ruffed grouse, woodcock, rabbits, squirrels and raccoons. It is the only method of permanently improving conditions for pheasants and quail. It is less spectacular than restocking, which unfortunately has come to be the most popular method.

## REPORT OF PROGRESS

### Predator Control

Predators in general are expected to reach the peak of their cycle during the years 1936 and 1937. A decline in the number of predators may be expected within two years.

A careful control of predators by selected trappers working under supervision has been practiced on all State-owned areas, including sanctuaries where this Department has been given jurisdiction over wildlife. The warden service has been supplied also with equipment and with authority to control predators. A report of predator control by the warden service and by State-supervised trappers on State-owned lands for the period of this biennium is as follows:

## REPORT OF PREDATOR CONTROL

July 1, 1934—June 30, 1936

Species	By Wardens	By State Trappers	Total
Red Fox .....	*177		
Grey Fox .....	*167		
Total Fox .....	344	799	1,143
Bobcat .....	7	13	20
Wild House Cat .....	1,914	252	2,166
Red Squirrel .....	910	347	1,257
Weasel .....	86	437	523
Skunk .....	198	1,473	1,671
European Hare .....	9	62	71
Porcupine .....	10	1	11
Harmful Hawks .....	912	330	1,242
Harmful Owls .....	109	196	305
Crow .....	4,654	1,309	5,963
Starling .....	920	291	1,211
Water Snake .....	4,031		4,031
Snapping Turtle .....	3,997		3,997
Weight of Turtles .....	65,849 lbs.		65,849 lbs.

\*Taken on managed Sanctuaries.

## Pheasants

Fewer pheasants have been liberated during this biennium than during the previous two-year period. That is because of reduced revenues and because, in seeking to establish a balanced program, some attention has been given to species previously neglected, such as waterfowl, quail, rabbits and raccoons.

The necessarily reduced liberations have served to call attention to the fact that beyond a certain point, (about 12,000 birds equal sexes) the liberation of pheasants does not result in better shooting comparable to the expense involved.

Between the years 1926 and 1932, the liberation of pheasants steadily increased from 6,000 to 24,000, in round numbers. The number of cocks and hens liberated was approximately equal. At an average cost of \$2 per bird, this represents an increase of \$36,000 during the six-year period. The reported kill of cock pheasants during this period increased from 20,000 to only 27,000. Thus, an expenditure of \$36,000 accomplished a gain of 7,000 birds, value \$14,000. The total loss by wasteful expenditure amounts to \$22,000.

During the year 1933, only 18,000 pheasants were liberated, of which 1,841 were raised from eggs distributed to farmers and sportsmen. The reported kill in 1933 reached an all time high of 30,000 cock birds.

The relationship between the liberation of pheasants and the reported kill is shown in the accompanying graph. A more detailed report entitled Game Management Circular No. 5 is available on request.

**CONNECTICUT STATE BOARD OF FISHERIES AND GAME  
RECORD OF PHEASANTS LIBERATED AND PHEASANTS KILLED**

**NUMBER OF PHEASANTS LIBERATED**

Year	FALL			SPRING			TOTAL		
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total
1908	44	44	88				44	44	88
1913	829	830	1,659				829	830	1,659
1914	1,042	1,043	2,085				1,042	1,043	2,085
1915	686	686	1,372				686	686	1,372
1916	625	625	1,250				625	625	1,250
1917-18	1,422	1,423	2,845				1,422	1,423	2,845
1919-20	1,248	1,250	2,498				1,248	1,250	2,498
1921	835	835	1,670				835	835	1,670
1922	2,613	2,614	5,227				2,613	2,614	5,227
1923	3,380	3,381	6,761				3,380	3,381	6,761
1924	2,214	2,215	4,429				2,214	2,215	4,429
1925	2,373	2,373	4,746				2,373	2,373	4,746
1926	3,078	3,079	6,157	20		20	3,098	3,079	6,177
1927	4,235	4,235	8,470	433		433	4,668	4,235	8,903
1928	7,688	7,689	15,377	13		13	7,701	7,689	15,390
1929	8,138	8,139	16,277	709		709	8,847	8,139	16,986
1930	8,334	8,335	16,669	1,589		1,589	9,923	8,335	18,258
1931	8,386	8,386	16,772	1,576		1,576	9,962	8,386	18,348
1932	8,383	8,865	17,248	2,170	3,758	5,928	10,553	12,623	23,176
1933	6,783	5,887	12,670	2,038	4,074	6,112	8,821	9,961	18,782
1934	8,555	1,778	10,333	2,036	6,106	8,142	10,591	7,884	18,475
1935	5,986	1,167	7,153	1,770	6,410	8,180	7,756	7,577	15,333
1936	4,153	963	5,116	1,662	4,791	6,453	5,815	5,754	11,569

Year	Number of Eggs Distributed
1908	114
1913	
1914	
1915	3,904
1916	1,917
1917-18	6,465
1919-20	4,390
1921	5,834
1922	4,549
1923	2,883
1924	2,945
1925	
1926	
1927	
1928	
1929	
1930	
1931	
1932	
1933	14,827
1934	19,846
1935	14,773
1936	11,572

\*Estimated

Year	I. Number of Birds Reported Killed		
	I	II	III
	II. Number of Birds Reported Killed in Excess of Number Liberated		
	III. Percentage of Increase of Kill Over Liberation		
1923	6,974	213	3%
1924	7,840	3,411	77%
1925	16,196	11,450	241%
1926	20,291	14,114	228%
1927	20,415	11,512	129%
1928	19,828	4,438	29%
1929	21,362	4,376	26%
1930	23,341	5,083	28%
1931	24,743	6,395	35%
1932	26,513	3,337	14%
1933	30,147	11,365	61%
1934	26,944	8,469	46%
1935	*28,200	*12,867	*84%

CONNECTICUT STATE BOARD OF FISHERIES AND GAME.

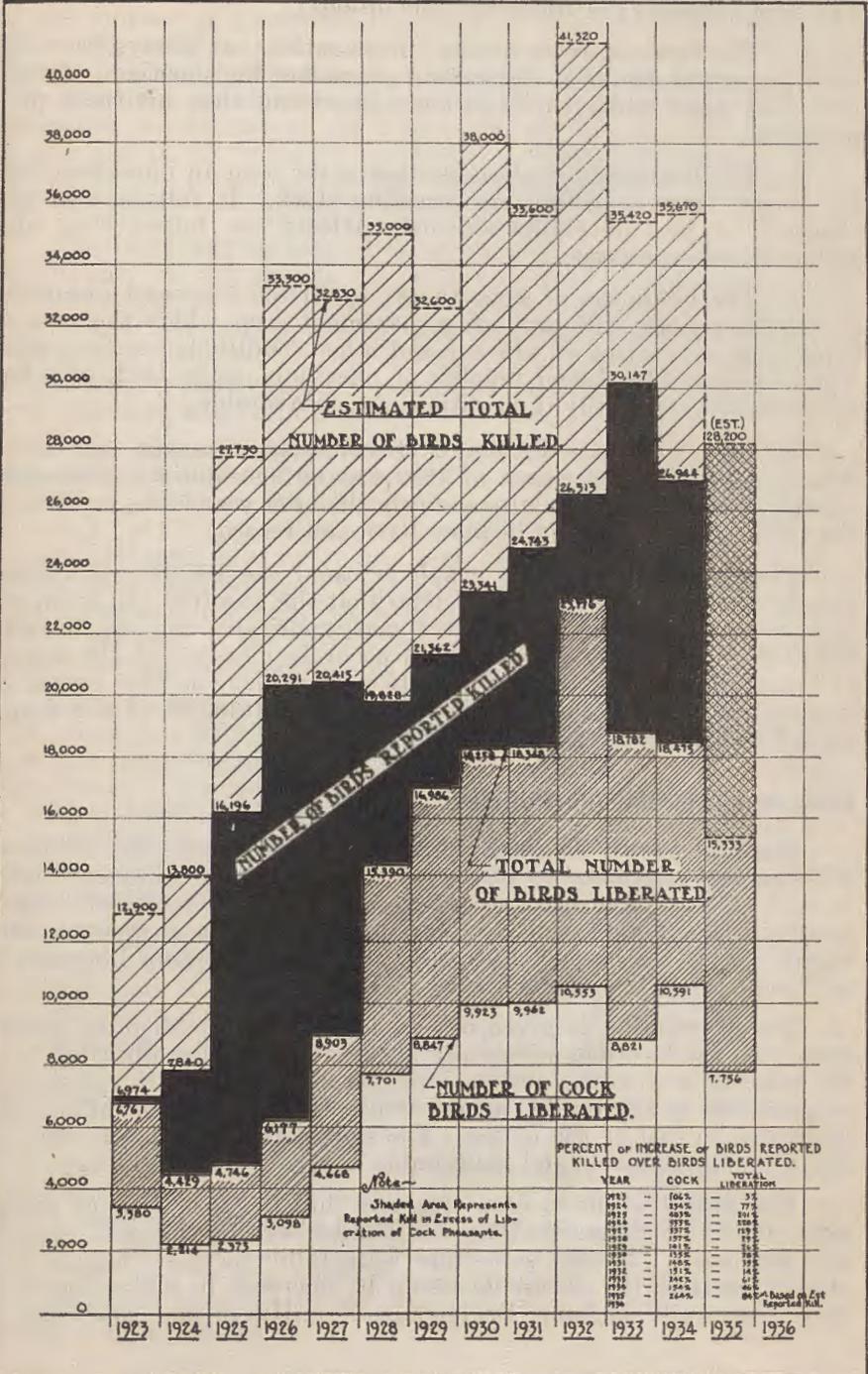


CHART SHOWING PHEASANTS LIBERATED & PHEASANTS KILLED.

The data supports the following conclusions:

1. The increase from natural propagation has always been the most important factor in furnishing pheasants for shooting. It follows that game management is more important than artificial propagation.

2. The liberation of pheasants has never been an important factor except in replenishing the breeding stock. It follows that the shooting of hen pheasants seriously affects the future crop and future shooting seasons.

3. The liberation of some twelve to fifteen thousand pheasants as breeding stock will produce a maximum crop which the area is capable of supporting if weather and other conditions are favorable. The liberation of a larger number of pheasants, as in 1932, does not affect results materially if conditions are unfavorable.

Records from the United States Weather Bureau and other sources show that the season of 1932 was unfavorable for producing a game bird crop. They also indicate that the year 1936, to date, is the most unfavorable of which we have any record.

The data on which the graph is based are reliable as a comparative measure. There is no claim that the reported kill is an accurate one, but it has been proved mathematically and conclusively that the reported kill represents an accurate measure of the degree of variation in the kill from year to year. There is also reason to maintain that the estimated kill as given is within 5% of the actual total killed for each year.

### **Pheasant Distribution Policies**

Beginning with the year 1932, the warden service has liberated all pheasants purchased by the Department. Suitable pheasant covers in each county have been recorded on maps and identified with a number. The sex of each pheasant liberated for the past four years together with the date of liberation and the area where liberated is on file at the office of the Board in Hartford.

No information is given out in advance of the shooting season regarding the locations where any pheasants have been liberated. At the close of a shooting season, information regarding the liberation of pheasants in any limited area is available to any person sufficiently interested to call at the office. The publication of all this data in detail is impracticable and inadvisable.

The idea prevails in some quarters that the liberation of pheasants should be determined by the number of licenses sold in each city and town. If that procedure were followed to its logical conclusion, most of the pheasants would be liberated in the commons of such cities as Waterbury, Bridgeport, New Haven and Hartford.

To emphasize the fallacy of the theory, we have prepared a record of the number of pheasants liberated in each township during the year 1935 together with a record of where they would have been liberated if the distribution had been based on the licenses issued. Obviously, the rural areas where conditions are most suitable for pheasants, would receive an inadequate allotment. This record is on file also in the office of the Board in Hartford and may be reviewed by any person sufficiently interested to call at the office for that purpose.

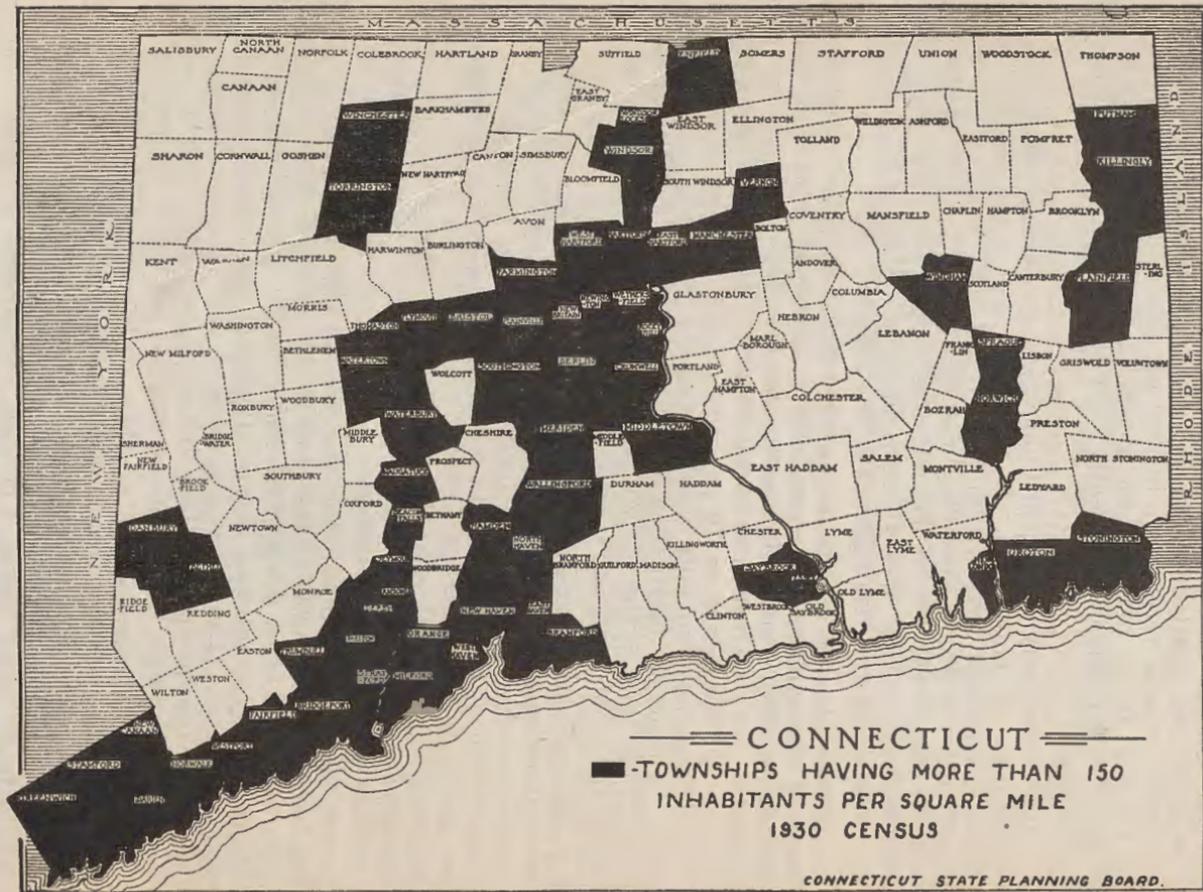
The accompanying map of Connecticut graphically illustrates the distribution of population. It is a fact that approximately 80% of the population lives within 30% of the total area of the State. Since there is a corresponding distribution of licensed hunters, it follows that about 80% of our revenues from license fees come from the thickly populated area where natural conditions for fish and game or for hunting and fishing are far from ideal.

If the pheasants liberated in 1936 had been distributed on the basis of the number of licenses sold in each city and town, the 64 townships which are shaded on the map would have received 6,281 pheasants, or 71.5 per cent of the total. The rural sections representing 105 townships or 70 per cent of the total area of the state would have received only 2,504 pheasants or 28.5 per cent of the total. The actual distribution of 8,785 pheasants was 3,010 pheasants or 34.3 per cent in the thickly populated areas and 5,775 pheasants or 65.7 per cent in the rural area.

The present policy of liberating pheasants mostly in rural areas with allotments within each county determined by the suitability of cover and other conditions is further justified on the basis that this Department of the state should not encourage shooting in residential or thickly settled districts. Our obligation is not confined merely to providing something to shoot. The greatest benefits from every point of view will be derived if sportsmen are obliged to go into the rural areas for their recreation.

Although it is known that the Connecticut valley and the southern counties west of the Connecticut River are better suited for pheasants than most other parts of the state, the Department has continued the previously established plan of allotting an equal quota of pheasants to each county. The actual deliveries of pheasants by game breeders and the consequent liberation by counties shows an unavoidable variation of about 10% from the original allotments as planned.

The distribution within townships is based on an appraisal of the suitability of each cover. No pheasants are liberated on lands which are posted against hunting. A small "open" area, surrounded by a posted area would be considered unsuitable and no pheasants would be liberated there. Likewise, if a natural pheasant swale is posted and used by any individual or group for shooting, no pheasants would be liberated in the less suitable surrounding area, even though it were not posted.



No pheasants are liberated in the vicinity of state supervised private shooting preserves for the reason that the preserve owners are required to develop their properties and to stock them so intensively that there is a drift of pheasants outward to stock surrounding covers. The extent of posted land in many parts of the state, particularly in New Haven county, prevents the Department from liberating pheasants in many areas which would qualify if not posted.

The establishment of regulated shooting under the farmer-sportsmen cooperative plan at once increases the suitability of areas for game and results in an increased liberation of pheasants. They have a better chance of survival on such areas than on unregulated, unmanaged areas. However, by no means has the distribution been confined to the State-owned, leased or regulated areas.

### Balanced Program

Previous to 1932, about 90% of all funds derived from hunting and trapping licenses available for game restoration were devoted to the purchase and liberation of pheasants. During this period a precedent was established which called for the liberation of 18,000 or more pheasants.

The liberation of 23,000 pheasants in 1932 was accomplished by drawing on a fund which, under a previous policy, had been reserved to meet periods of low income in the Game Division. That was justifiable as an experiment to determine whether or not excessive liberation of pheasants (15,000 cock birds) would compensate for an unfavorable breeding season. It did not.

There was no reason to expect that that peak in the liberation of pheasants could be continued even if the experiment proved successful, unless appropriations or revenues from other sources were greatly increased.

This attention to the interests of pheasant hunters to the exclusion of the hunting interests of other groups and at their expense was justifiable only because at that time little information was available regarding practical methods for improving the conditions for other kinds of game.

Since that time, largely as a result of wildlife research carried on in other states, some information regarding practical methods of improving conditions for other species has been made available. Consequently, the Department has sought to bring its program gradually into balance so far as possible in relation to the interests of all the licensed hunters.

The extent to which this has been accomplished is shown in the accompanying diagram. The program is not yet balanced in proportion to hunting interests which are indicated on the chart as Hunting Success compiled from the reports of game killed. Such changes must be made gradually. An exact balance may never be practic-

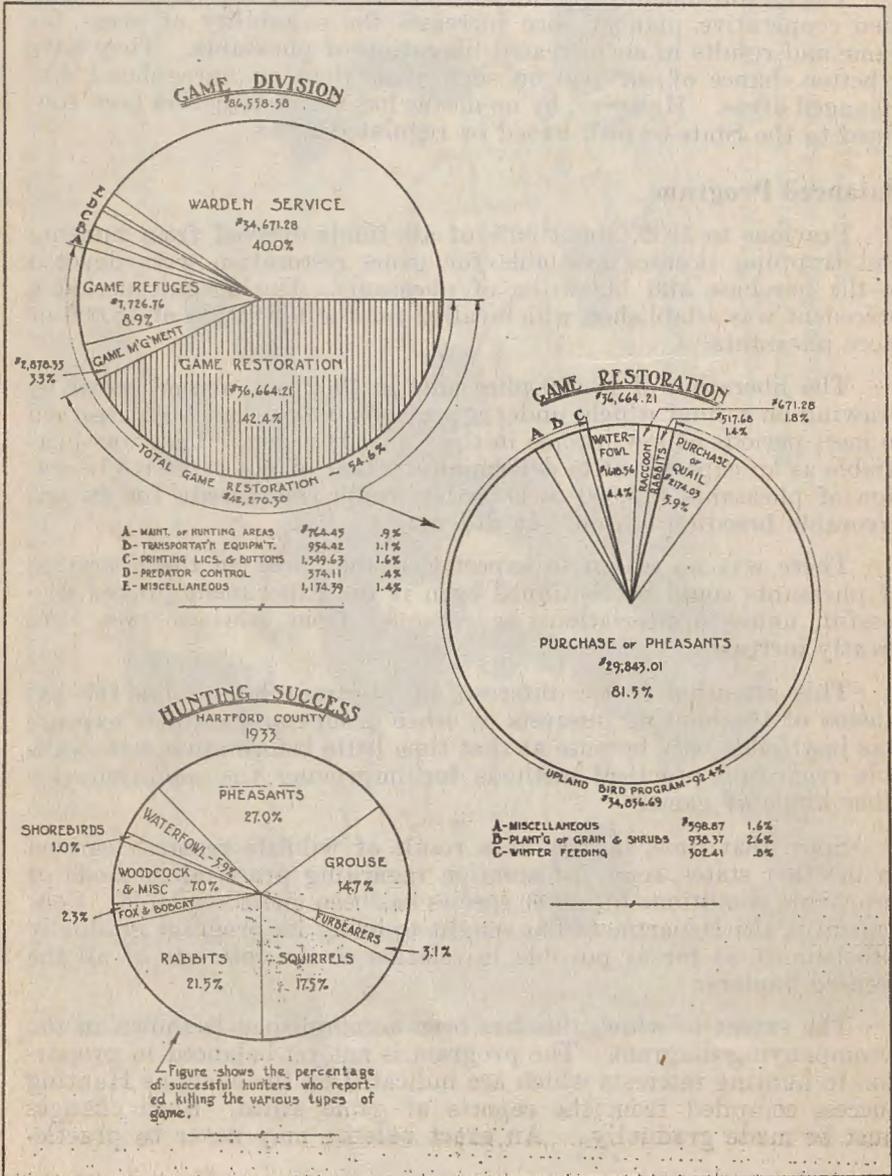
CONNECTICUT STATE BOARD OF FISHERIES AND GAME

CHART SHOWING

GAME RESTORATION EXPENDITURES

JULY 1, 1934 — JUNE 30, 1936

BASED ON THE AVERAGE OF THE TWO FISCAL YEARS.



able. The allotment for waterfowl and quail exceeds the interest, but the opportunity is great in each case and the results accomplished, with only a few years of effort, are encouraging particularly in the case of waterfowl. As the new programs become established, the allotments may be decreased as other new projects develop.

## STATUS OF WILDLIFE

### Pheasants

A crop of 20,000 to 30,000 cock pheasants (reported killed), appears to be all which can be produced in the state under favorable conditions. An annual liberation of from 12,000 to 15,000 pheasants, equal sexes, appears to be all the breeding stock necessary to produce a maximum crop depending on weather and other conditions beyond our control. In southern Michigan a liberation of 12,000 pheasants produces a reported kill of about 200,000 cock birds annually. Farther west in South Dakota, no pheasants are liberated and the annual crop numbers a million or more. This return on investment may be taken as representing a measure of the relative suitability of the areas mentioned. Thus it appears that Connecticut is not generally adapted to the pheasant. That condition can be improved only by game management and possibly by giving more attention to the quality and vitality of pheasants liberated as breeding stock.

### Quail

The devigorating influence of southern quail, formerly introduced and liberated in Connecticut probably has been eliminated by a series of severe winters. What stock remains represents a survival of the fittest. To that extent, the losses of less hardy quail may prove to be a blessing. The hope for more quail in the future lies in continuing the present policy of preventing the importation of any quail into Connecticut and of permitting the liberation of only the strain of native, northern, hardy quail, which the Department has acquired.

### Grouse

Ruffed grouse reached their peak in 1935. They are due for a sharp decline in 1936. We anticipate a low period during 1937 and 1938, with the possibility of opening the season again in 1939. These birds should reach their peak of abundance again in 1945.

### Woodcock

The status of these birds is difficult to measure because of their migratory habits. So far as the Department records go, native birds are at least holding their own. The shooting season depends mostly on flight birds which may light here, depending on weather, wind and other conditions. The results of the shooting season in Connecticut do not accurately measure the status of this bird.

## Waterfowl

There has been a definite increase of waterfowl during this biennium. We believe that the increase of "native" birds, both black and mallards, is largely the result of the establishment and maintenance of 55 protected waterfowl breeding areas. These are located mostly on small inland ponds which are not adapted for shooting. However, the bulk of our black duck shooting in Connecticut is the result of good breeding seasons in states to the north, particularly Maine, and in the Maritime Provinces.

The increase of scaup (broadbills) in the Sound is the result of favorable breeding and rearing seasons in the northwest, including the Prairie Provinces in Canada.

Woodducks have increased to the point where they may be classed as common. Certainly they are our most common native duck. During the early part of the shooting season they are classed as a nuisance because they often fly with other ducks and confuse the shooter since they are protected by state and federal law.

The greatest handicap to waterfowl is oil pollution and the destruction of habitats by drainage.

## Shore Birds

There appears to be little hope for any substantial increase in shore birds. The salt marshes which they formerly frequented in great numbers, have been so thoroughly drained in a popular effort to control mosquitos, that the environment which they require has been largely destroyed. The drainage has also affected the supply of waterfowl by destroying aquatic and other vegetation upon which they depend for food.

## Rabbits

Rabbits are subject to cyclic fluctuations which seem to precede the rise and fall of grouse by a year or two. They reached the extreme low of their cycle during this biennium. The elimination of the use of ferrets may have saved them from practical extermination. They have been slow to recover but at last they are showing an increase during 1936.

The policy of preventing the importation of rabbits into Connecticut has been an important factor in keeping the state free from the disease, tularemia, which if introduced, would further complicate the problem.

Experiments in the propagation of rabbits in large enclosures and in small pens are being carried on at Shade Swamp Sanctuary, Farmington. The small pen method employed is an adaption of a procedure recommended by George G. McCarty, Newfield, New Jersey.

The results of our experiments indicate that wild cottontail rabbits have a potential reproductive capacity of more than ten young per year. Eight does placed with three bucks in an enclosure where ideal food and cover conditions were maintained, produced and reared to maturity 83 young rabbits. This suggests the futility of depending on the liberation of rabbits as a practical method of increasing the supply for shooting. Given a favorable environment, the wild breeding stock on hand is sufficient to produce an abundant annual crop of rabbits for shooting. The problem is to determine the factors which now limit their increase by natural reproduction and to apply corrective measures.

The Department fully recognizes the importance of rabbits and their relation to the entire game problem. It is prepared to apply constructive measures as soon as procedures have been worked out. Consequently, the cooperative research program has selected the rabbit for intensive study.

### Squirrels

The population of squirrels appears to vary directly with the food supply which consists mostly of nuts and seeds. The loss of the chestnut may be one of the important reasons for increasingly violent fluctuations. Nature's method of limiting the squirrel population to the supply of food available, is by periodic migrations during which many are lost. Although some efforts have been made to follow the migration which occurred in 1935, no one seems to know just where the squirrels went to or where the migration ended.

### Raccoons

The results of the raccoon breeding experiments at Shade Swamp Sanctuary, Farmington, offer sufficient encouragement to warrant a continuation of the program. It is largely a problem of selecting those individual raccoons which will breed and rear young in captivity.

Fifty-one raccoons were liberated during 1935, mostly on raccoon sanctuaries where their chances of being killed before having an opportunity to breed were reduced to a minimum. The present program is planned to produce an annual increase of fifty raccoons for liberation.

Research conducted by Professor T. H. Bissonette, of Trinity College, Hartford, on the influence of artificial light on reproductive cycles, has been applied to raccoons with excellent results. Successful matings have been secured in December resulting in young sufficiently mature to liberate in August or September. One pair of raccoons produced under this plan mated during the first winter and produced young during the following spring. The cooperation of Professor Bissonette is gratefully acknowledged.

The population of wild raccoons furnished fairly good hunting during this biennium. As a result, many were attracted to the sport of 'coon hunting, including an increasing number who showed little regard for conservation laws. The laws which protect raccoons are almost impossible to enforce except through the influence of public opinion as expressed by law-abiding 'coon hunters. The killing of raccoons before the season opened reached alarming proportion during 1935. The situation was well known to many 'coon hunters.

To correct this situation, regulations for the year 1936 prohibit the training of dogs except during daylight hours. This action was taken reluctantly in the hope that the organized raccoon hunters would declare their determination to report all violations to the Department with the names of the offenders and supporting evidence. That is the only practical way in which the abuses which have crept into the sport of 'coon hunting can be eliminated. When that has been accomplished effectively, the Board is prepared to permit again the training of 'coon dogs after dark between the dates of September 1 and March 31.

### Foxes

The grey fox continues to increase, making the total population of foxes too numerous. The policy of not killing foxes which some fox hunters have adopted may be justifiable when foxes are scarce or on the decline, but it actually threatens the future of the sport if applied during periods of abundance. Foxes have their place in the scheme of things, although the red fox is always more deserving than the grey. When either species or the combination of both are allowed to get out of balance, drastic measures are bound to follow.

Although little is known about cycles and disease depressions among foxes, it seems altogether probable that unless fox hunters and trappers reduce the high population of foxes, which obtains in certain areas at this time, natural forces will be set in motion which may drastically reduce the fox population to a lower than normal level.

There is danger also that sportsmen interested in the conservation of other game species may demand and secure a revision of the trapping law which would place a particular handicap upon the activities of all fox hunters.

Thus it appears that the fox hunters are largely responsible for the status of their own sport and that it would be to their own advantage to give serious attention to hunting and killing the grey fox.

Fox hunting is handicapped by the deer population of Connecticut. Since an open season on deer is out of the question and since deer will probably always be with us, it appears that the only practical solution for the fox hunters is to give more attention to the training of their dogs.

## Fur Bearers In General

The average value of all furs taken in Connecticut is estimated to be from \$80,000 to \$100,000 per year. This revenue, distributed among 2,063 persons who hold trapping licenses, mostly farm boys, represents a harvest of a natural resource at no expense to the state and almost without attention or assistance except in the enforcement of protective laws.

Muskrats alone return an estimated revenue of \$30,000 per year. It is probable that the revenue from this crop could be substantially increased if the marshes which produce muskrats could be improved and placed under management.

The Department has begun experiments in practical methods of increasing the population of muskrats on some of the marsh areas which have been purchased by the Department primarily for waterfowl. Mr. Dean Amadon is in charge of this program. He is working in cooperation with Mr. Floyd M. Callward, Extension Forester, Agricultural Experiment Station, Storrs, Connecticut. Mr. Callward is actively interested in the program in the hope that the production of muskrats by management of small swamps and marshes which are found on many farms may result in increased revenues for farm boys.

It appears that fur bearers in general are at or near their peak of abundance. A decline in muskrats is indicated by observations made through the summer of 1936.

The great abundance of skunks during this biennium warrants the prediction that they also may experience a sharp decline in numbers within the next few years.

Mink and otter appear to be on the increase during this biennium. The increase in bobcats, extending their range southward through the state, and the spread of opossum northward indicates a changing condition which is little understood but which may lead to serious consequences.

## Miscellaneous

Porcupines have been extending their range gradually during recent years. Although they are still rare in Connecticut, they have been found here in increasing numbers during this biennium, particularly in the northwestern part of the state. The status of weasels is difficult to determine because the number of weasels killed is not reported since the fur is practically of no value. Domestic cats which have reverted to the wild continue to be too numerous and should be eliminated so far as possible, since they are entirely foreign to our fauna and have no legal status.

Crows are much too plentiful generally throughout the country. They are a serious menace, particularly to water fowl since they destroy many nests and eggs. Thousands of crows from the north mi-

grate southward to spend the winter in Connecticut where they gather in great roosts. The situation here offers an excellent opportunity to render valuable assistance to the improvement of game conditions particularly the waterfowl breeding areas to the north, if an efficient method of controlling crows could be devised. All the methods which have been reported as successful in other parts of the country have been tried here without success. The Department is continuing experiments with various kinds of traps and with all other known methods.

## THE DEER SITUATION IN CONNECTICUT

**Status of Deer.** An estimate, based on a careful study of reliable reports and statistics, clearly indicates that there are more deer per acre in Connecticut and in Rhode Island than in any of the other New England States. Deer in Connecticut appear to be in excellent condition, comparing favorably in weight and size with deer from other New England States.

The deer population in Connecticut must be controlled in order to avoid damage to crops as well as damage to the deer herd itself which would result from an undue increase in their numbers. The balance between the deer population and their natural food supply appears to be satisfactory in general with serious damage to crops caused only in limited areas where market garden crops and apples are grown. In areas where deer are plentiful they interfere with fox hunting and tend to discourage that sport which is so useful in keeping foxes under reasonable control so that upland game may also thrive in the area.

**Control of Deer.** The only control of deer which is legal in Connecticut is that provided in Section 3134 of the General Statutes which permits the owner or lessee of agricultural lands or any members of his family or any person regularly employed by him in regular farm work to kill with a shot gun any wild deer found on that land, *provided that on that land any fruit tree or growing crop, other than grass growing on uncultivated land, shall have been injured or destroyed by deer within thirty days.* Deer so killed shall be the property of the owner or lessee of the land upon which the deer shall have been killed but shall not be sold or offered for sale. The person by whom or under whose direction any deer which have been wounded or killed, within twelve hours thereafter, shall report to the State Board of Fisheries and Game all facts relative to such wounding or killing.

**Policy of State Board.** The policy of the State Board of Fisheries and Game is to encourage the killing of deer by property owners under the provisions of Section 3134 as a control measure and as a means of compensating farmers for damage to crops caused by deer. Consequently the Board issues permits to property owners to use a rifle to kill deer on their property.

Shooting deer at any time by any means *except as provided in Section 3134* of the General Statutes is considered a serious and deliberate violation of the fish and game laws.

Jack-lighting for deer is considered one of the most serious violations of the fish and game laws because of the danger to domestic stock and human life and also because it is a deliberate violation and a thoroughly unsportsmanlike practice.

An open season on deer in Connecticut has never been favored by the Legislature. It is not favored by the Board because of danger to human life and livestock and also for the following reasons:

### Farmer-Sportsman Cooperation—Fair Exchange

The farmer pays taxes on land which produces legal upland game as well as deer. The deer are valuable to farmers as a food crop. The food value of the small game on their land is not worth the effort required to hunt and shoot it. Most farmers permit licensed sportsmen to hunt small game on their land. On the basis of cooperation and fair exchange, sportsmen should be willing to protect the deer for the benefit of the farmers. Sportsmen should not attempt to deprive property owners of the valuable food crop of deer by advocating an open season on deer. They should support the policy of the Board in instructing Wardens to stop illegal shooting of deer and to prosecute such violations as vigorously as possible. Thus the sportsmen protect the deer for the farmers to shoot and eat in exchange for the small game shooting privileges.

## PRIVATE SHOOTING PRESERVES

The plan of permitting individuals or groups to operate private shooting preserves with extended seasons and bag limits under the supervision and regulation of this Department was inaugurated in 1933. The regulations of the Department encourage game management practices and require a liberation of pheasants so intensive that there will be a substantial overflow of birds to surrounding areas. The experience to date has demonstrated the original claim that these preserves are actually beneficial to the sportsmen and to this Department. Complete records for the years 1934 and 1935 are as follows:

Year	Number of Preserves	Total Area	No. of Pheasants Liberated	No. of Pheasants Killed
1934	9	4,522	3,918	1,252
1935	13	6,770	6,784	2,624

The records of pheasants liberated and killed in the year 1936 are not available, but unofficial reports indicate that the preserves experienced a poor season with an average of about fifty per cent of the number of birds killed in 1935.

## SHADE SWAMP SANCTUARY

### Origin and Present Use

The first acquisition of property by the Connecticut State Board of Fisheries and Game in the area now known as Shade Swamp Sanctuary occurred in 1926 when Walter W. Holmes donated a tract of 140 acres. For many years Mr. Holmes had enjoyed shooting waterfowl from a blind on his property in the swamp.

Subsequent gifts from Mr. Alain White and others made it possible for the State Board to purchase additional tracts so that now the State of Connecticut owns the entire swamp proper from Highway U. S. 6-A north to Meadow Road, together with a surrounding border of high land to the west. The swamp south of the highway is held by the State under a long-term lease, together with protecting high land.

The first of the State-leased public shooting grounds in Connecticut was established in 1929 on the area adjoining the west side of the State-owned sanctuary. This now comprises 3,213 acres and includes a small tract reserved exclusively for women. The Sanctuary proper is divided by the tracks of the N.Y., N.H. & H. R.R. On the east side is the headquarters and the swamp proper, which serves as a natural breeding ground and resting area for waterfowl.

Facilities are available also for taking care of many live birds and quadrupeds frequently injured, which the Department secures from time to time. Near the headquarters, experiments are conducted in the propagation of raccoons, rabbits, pheasants and quail.

West of the railroad there is another dirt road leading from Highway U. S. 6-A to a yellow farmhouse, also on State-owned property. Several ponds and pools in this area are used for rearing pond fishes and trout. Some are used for holding black and mallard ducks in connection with the waterfowl program of the Department.

Although the expense of maintaining this entire project is justified by the practical values and benefits derived, many educational features have been made possible through the assistance rendered by other state departments and by several Federal agencies.

The roadside picnic area and the entrance to the property from the highway are maintained by the State Highway Department.

The rustic building at the entrance and most of the nature trail were built by the Civilian Conservation Corps.

The new exhibition pens as well as the parking space and many other improvements in the vicinity were made possible by funds and labor made available by the W. P. A.

The work area around the headquarters building is necessarily closed to the public, although so far as possible all of the important projects are illustrated with exhibits along the nature trail. Most of

the area is open to inspection by the public during daylight hours although visitors are requested not to leave the trail.

Shade Swamp Sanctuary serves as a field headquarters for all game restoration programs. Mr. Albert G. Csech is in charge of the entire area. He is ably assisted by Mr. Milton Caroline. It is not a game farm. The propagation of game birds and quadrupeds which is carried on is largely for experimental or demonstration purposes and is incidental to the following major purposes:

### **Pheasants**

Suitable pens are available for holding pheasants for short periods. This is essential when pheasants are purchased from outside of the state. The value and quality of different strains and types of pheasants are observed in the pens and tested by liberation on the area.

### **Quail**

Wild trapped northern quail secured from Wisconsin are held here until they have become acclimated and ready for liberation or for distribution to supervised quail breeders. These quail are received at a time of year when conditions are not suitable for their liberation. The selective breeding of this strain of quail to retain its wild, hardy qualities is carried on here.

### **Rabbits**

Experiments in breeding native rabbits are conducted on this area. The propagation of rabbits in large enclosures has been successful. The experiments are being continued to develop a practical method of propagating wild native rabbits in small pens. The States of Connecticut and Pennsylvania are recognized leaders in this field having adopted methods worked out by George S. McCarty, Newfield, New Jersey.

### **Raccoon**

Experiments in breeding raccoons are conducted at the headquarters of Shade Swamp Sanctuary. A total of fifty-one raccoons were liberated in 1936. Through the cooperation of Professor Bissonnette of Trinity College, experiments in the use of lights to induce sexual activity are being conducted. Already this has reduced the cost of propagating raccoons and rearing them to maturity.

### **Waterfowl**

Pens are available for holding waterfowl during the winter which are used for liberation in suitable breeding ponds the following spring. Experiments in rearing wild mallard and black ducks are being conducted. Many ducks are reared naturally in the swamp.

### General Sanctuary

Game management practices, including the planting of grains, food bearing shrubs and the release of native shrubs by improvement cuttings in wooded areas are demonstrated here. Experiments in predator control are also carried on. Tests of liberating game at various ages and seasons are conducted on this area to determine the most economical and effective methods.

### Trout Rearing

Trout rearing pools are maintained on the west side of the area. During the year 1935 the production of these pools was 6,950 rainbow yearlings. During the year 1936 the production of these pools was 6,235 brook trout yearlings.

### Pond Fish

The following pond fishes were reared in ponds on this area during the years 1935 and 1936:

	1935		1936
Bullheads .....	20,500	Bullheads .....	23,798
Calico Bass .....	1,376	Yellow perch .....	3,250
Roach .....	2,250	Calico Bass .....	6,554
Shiners .....	1,250	Roach .....	2,650
		Shiners .....	11,400
	<hr/>		<hr/>
	25,376		47,652

### Educational Program

A nature trail has been built by the CCC and further improved by other Federal agencies, particularly WPA. Thousands of people, representing the general public, visit this area which offers the only opportunity of its kind in the state for this group to become familiar with the activities of this Department and the practical methods which may be used to increase the supply of wildlife. An exhibit of live specimens of pheasants of various species and of native birds and quadrupeds are located along the nature trail.

### Expenditures and Maintenance Costs

Most of the pens for holding pheasants, quail, rabbits and raccoons and all of the exhibition pens have been built with funds contributed by the Federal government under CWA, FERA, and WPA. Most of the shrub planting and game management projects which are demonstrated on this area have been made possible by Federal aid.

The total contributions from all Federal agencies are as follows:

CCC .....	\$ 757.50
CWA .....	1,500.00
ERA .....	4,250.00
WPA .....	5,474.00
	<hr/>
Total .....	\$11,981.50

The total expense to the Department, not included in the Federal expenditures listed above, has been \$2,114.47. The average annual cost of maintaining this area during the past three years has been \$5,100.

## CIVILIAN CONSERVATION CORPS

Conspicuous contributions to the Wildlife Restoration Program have been made by the Civilian Conservation Corps during the biennium.

One new pond has been created and repairs have been made to the dams and shores of nine other State-owned ponds. Notably among these are the construction at Burr Pond on the Paugnut State Forest and Day Pond in the Salmon River Forest. In the Pachaug Forest a truck trail has been constructed to the State-owned Green Falls Reservoir. Adequate parking facilities and a convenient dock have been provided for the convenience of the many people who now enjoy rainbow trout fishing there.

The valuable work in stream improvement accomplished by the C. C. C. has been reported under the section on Fish Restoration. (See page 34). However, it should be pointed out that it would have been impossible to have made this progress if it had not been for the contribution of Federal funds and the assistance of the C. C. C.

Much of the State forest lands are of little value either for wildlife or for growing trees of merchantable value until they have been improved. Many adjustments needed for wildlife have been made on the state forests and certain barren areas have been planted to food bearing shrubs. Other areas have been treated by "improvement cuttings" designed deliberately to increase the supply of native shrubs which have been suppressed by a too-densed forest cover.

All new coniferous plantations have been considered from their importance as winter cover for upland game birds. Open spaces have been left for herbaceous growth and dusting grounds and food plots have been provided around the edges. Fire lanes and trails through the dense forest blocks have created new "edges" which are the preferred habitat of grouse.

The Civilian Conservation Corps is occasionally criticised for clearing brush so extensively that the State forests are made to resemble parks. Investigation of these complaints almost invariably show that they are based either on reports of work in areas other than Connecticut or on misunderstandings of the purpose of the work being done here. As a matter of fact, of the 67,177 acres of state forests in Connecticut a total of only about 100 acres has been cleared of brush to provide parking and picnicking accommodations for the general public. A total of only 20,000 acres has received any attention whatever from the C. C. C.

We are glad to report that we know of no case where any material damage to wildlife interests have been caused except in connection with gypsy moth control. That work is carried on under regulations of the U. S. Forest Service which call for a general clearing of brush in infested areas. We hope that that procedure will be modified in the near future.

## ACKNOWLEDGEMENTS

The status of wildlife is dependent upon so many factors that the work of this Department is likewise dependent upon the cooperation of other departments of the state and of the federal government and of many individuals and private organizations.

The valuable assistance rendered by many sportsmen's clubs, boy and girl scout groups, 4-H clubs and other similar organizations and by many individuals too numerous to record, is gratefully acknowledged.

We have received valuable cooperation also from many private and municipal water bureaus, particularly in Bridgeport, New Haven, New London, Hartford, Torrington and Winsted.

The cooperation which the Department has enjoyed could not have been secured without the assistance of the Press in disseminating timely information. We gladly acknowledge our indebtedness to the Press in general and to the rod and gun editors of all newspapers in Connecticut and of many in other states.

We express appreciation also for valuable cooperation received from the following agencies:

- Civilian Conservation Corps
- Works Progress Administration
- Federal Emergency Relief Administration
- Resettlement Administration
- U. S. Bureau of Fisheries
- U. S. Bureau of Biological Survey
- State Park and Forest Commission
- Commission on Forests and Wildlife
- State Water Commission
- Connecticut State College
- Connecticut Agricultural Experiment Station
- State Police Department
- Connecticut State Prison Farm, Enfield
- Mansfield State Training School and Hospital
- Connecticut State Farm for Women, Niantic
- Commissioner on Domestic Animals
- State Department of Aeronautics
- 43rd Division of Aviation, C. N. G.
- State Department of Health
- State Highway Department
- State Department of Agriculture

**Employees**

The Commissioners join with the Superintendent and Division Chiefs in acknowledging with full appreciation the loyal and efficient services rendered by all the employees, without which cooperation the progress recorded above could not have been achieved.

**LEGISLATION RECOMMENDED**

<b>Appropriations</b>	1937-1938	1938-1939
Administration .....	\$ 29,550.00*	\$ 28,700.00
Propagation of Fish .....	22,500.00	22,500.00
Protection and Propagation of Fish and Lobsters inhabiting Marine Waters...	15,000.00	15,000.00
Acquisition of Fishing and Hunting Rights .....	25,000.00	25,000.00
Protection and Propagation of Wildlife	3,500.00	3,500.00
Educational Program .....	10,000.00	10,000.00
	\$105,550.00	\$104,700.00

\*Additional equipment needed first year of biennium.

**Major Legislation**

- I. To grant discretionary power to restrict and to extend open seasons and bag limits.
- II. To prevent the posting of lands and waters unless authorized by owners.

## FINANCIAL STATEMENT

July 1, 1934—June 30, 1935

## Means of Financing

Balance in license funds .....	\$ 90,950.45
Receipts from sale of licenses and other sources .....	185,589.67
Appropriations .....	25,000.00

\$301,540.12

## Expenditures

<i>Administration Costs</i> .....	\$ 23,812.33
<i>Acquisition of Fishing and Hunting Rights</i> .....	10,000.00

*Protection and Propagation of Inland Fishes*

Field Supervision .....	3,875.00
Warden Service .....	36,223.69
Trout Restoration .....	39,919.19
Shad Restoration .....	2,672.91
Pond Fish Restoration .....	4,531.95
Purchase of Land .....	250.00
Predator Control .....	475.72
Printing of Licenses and Buttons .....	1,212.59
Permanent Improvements .....	3,119.32
Transportation Equipment .....	4,468.65
Maintenance and Improvement of Public Fishing Waters .....	4,149.81
Miscellaneous .....	1,258.54

\$102,157.37*Protection and Propagation of Marine Fishes*

Warden Service .....	\$ 2,384.65
Maintenance of Boat .....	1,004.67
Lobster Restoration .....	5,600.03
Flatfish Restoration .....	448.40
Smelt Restoration .....	1,057.66
Transportation Equipment .....	428.75
Miscellaneous .....	312.92

\$ 11,237.08*Protection and Propagation of Game*

Game Management .....	\$ 1,795.66
Warden Service .....	36,381.91
Game Restoration .....	40,462.10
Game Refuges .....	7,979.72
Printing of Licenses and Buttons .....	1,595.64
Maintenance and Improvement of Public Shooting Grounds .....	1,528.90
Transportation Equipment .....	1,384.75
Miscellaneous .....	1,551.85

\$ 92,680.53

Total Expenditures .....	239,887.31
Balance in Funds .....	61,652.81

\$301,540.12      \$301,540.12

## FINANCIAL STATEMENT

July 1, 1935—June 30, 1936

## Means of Financing

Balance in license funds .....	\$ 61,652.81
Receipts from sale of licenses and other sources .....	187,086.88
Appropriations .....	53,150.00
	<hr/>
	\$301,889.69

## Expenditures

<i>Administration Costs</i> .....	\$ 26,071.79
<i>Acquisition of Fishing and Hunting Rights</i> .....	23,310.37

*Protection and Propagation of Inland Fishes*

Field Supervision .....	7,379.35
Warden Service .....	39,258.17
Trout Restoration .....	43,183.82
Shad Restoration .....	2,885.91
Pond Fish Restoration .....	2,796.39
Purchase of Land .....	650.00
Predator Control .....	106.76
Printing of Licenses and Buttons .....	1,207.67
Purchase of Boats and Equipment .....	773.55
Permanent Improvements .....	4,493.79
Professional Services .....	147.85
Transportation Equipment .....	2,078.47
Miscellaneous .....	690.23
	<hr/>
	\$105,651.96

*Protection and Propagation of Marine Fishes*

Warden Service .....	\$ 2,550.02
Maintenance of Boat .....	833.04
Lobster Restoration .....	6,300.44
Flatfish Restoration .....	806.35
Smelt Restoration .....	691.78
Striped Bass Investigation .....	316.31
Transportation Equipment .....	352.20
Miscellaneous .....	388.03
	<hr/>
	\$ 12,238.17

*Protection and Propagation of Game*

Game Management .....	\$ 4,023.94
Warden Service .....	32,960.66
Game Restoration .....	33,614.52
Game Refuges .....	7,475.80
Printing of Licenses and Buttons .....	1,103.63
Transportation Equipment .....	524.09
Miscellaneous .....	733.99
	<hr/>
	\$ 80,436.63

Total Expenditures .....	\$247,708.92
Balance in Funds .....	52,491.14
Balance in Appropriations .....	
Reverting to Treasurer .....	1,689.63
	<hr/>
	\$301,889.69
	<hr/>
	\$301,889.69

**SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1934**

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trap- ping (Minors)	Nonresident Angling	Alien Angling	Nonresident Hunting	Nonresident Combination	Nonresident Property Owners Angling	Alien Property Owners Angling	Nonresident Property Owners Hunting	Nonresident Property Owners Combination
Hartford .....	6,296	3,947	1,881	168	171	111	72	89	29	3	16	71	2	2
New Haven .....	5,007	4,180	1,385	115	130	51	41	85	15	3	8	73	4	2
New London .....	1,470	1,531	496	113	62	48	76	20	33	2	13	31	11	4
Fairfield .....	3,685	4,432	1,262	106	84	39	176	31	63	4	30	31	28	18
Windham .....	1,496	910	461	97	59	35	164	13	27	6	11	5	4	8
Litchfield .....	3,334	1,779	1,008	153	72	48	257	23	51	6	82	32	12	20
Middlesex .....	686	1,056	320	112	92	62	24	4	22	3	4	6	2	2
Tolland .....	1,038	612	312	60	33	18	47	12	16	3	14	12	4	2
Totals .....	23,012	18,447	7,125	924	703	412	857	277	256	30	178	261	67	58

## SUMMARY OF ANGLING AND HUNTING LICENSES ISSUED FOR THE YEAR 1935

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minors)	Nonresident Angling	Allen Angling	Nonresident Hunting	Nonresident Combination	Nonresident Property Owners Angling	Alien Property Owners Angling	Nonresident Property Owners Hunting	Nonresident Property Owners Combination	*Special Combination
Hartford .....	6,550	4,045	1,817	162	160	114	65	84	22	3	6	60	3	2	..
New Haven .....	4,908	4,070	1,304	115	126	47	24	67	16	1	8	60	6	2	1
New London .....	1,412	1,535	472	111	80	36	53	19	29	5	4	26	13	4	..
Fairfield .....	3,780	4,426	1,229	122	75	53	157	23	64	5	40	23	21	15	..
Windham .....	1,452	973	430	82	65	44	145	25	31	5	16	7	9	8	..
Litchfield .....	3,318	2,098	967	151	94	54	260	30	49	2	66	37	14	16	1
Middlesex .....	734	1,054	280	117	87	50	29	3	32	2	6	3	..	2	..
Tolland .....	1,039	684	309	64	30	22	56	8	15	2	10	16	4	3	..
Office .....	....	....	....	....	....	....	1	....	3	..	..	..	..	..	..
Totals .....	23,193	18,885	6,808	924	717	420	790	259	261	25	156	232	70	52	2

\* Resident Hunting, Trapping and Angling.

## Game Census

### BIRDS

	1928	1929	1930	1931	1932	1933	1934
Brant .....	52	72	52	23	12	4	..
Ducks .....	13,819	17,487	14,223	9,398	18,313	18,864	9,609
Gallinules .....	44	29	10	43	29	34	29
Geese .....	48	40	61	42	77	43	37
Mudhens .....	139	147	131	180	183	189	81
Pheasants .....	19,838	21,362	23,341	24,743	26,513	30,147	26,944
Rail .....	1,665	2,694	4,551	3,627	5,872	3,966	2,864
Ruffed Grouse .....	5,587	....	10,706	14,511	12,974	17,356	17,168
Wilson's Snipe .....	78	165	215	296	438	396	336
Woodcock .....	13,942	13,458	16,964	19,901	14,069	14,978	13,874
Quail .....	....	....	....	....	....	5,911	1,196
Value .....	\$167,083.50	\$155,324.50	\$202,117.00				

### QUADRUPEDS

	1928	1929	1930	1931	1932	1933	1934
Bobcat .....	12	64	29	44	40	61	48
Fisher .....	38	55	15	12	22	4	18
Fox .....	2,586	2,304	2,084	2,177	2,426	3,359	3,895
Hares .....	411	453	600	595	607	852	486
Lynx .....	3	25	2	1	3	....	....
Mink .....	814	860	511	460	392	722	896
Muskrat .....	27,026	17,566	11,524	12,398	12,330	20,300	24,054
Otter .....	27	35	57	91	106	72	36
Rabbits .....	38,879	46,915	58,100	52,011	50,381	53,704	43,690
Raccoon .....	3,248	3,431	3,024	3,014	2,674	3,885	3,745
Skunk .....	10,546	8,320	5,386	4,582	3,753	5,233	5,886
Squirrels .....	22,645	21,031	29,397	39,528	45,020	57,863	42,704
Weasel .....	897	1,193	579	869	601	1,077	747
Value .....	\$187,370.70	\$170,312.80	\$150,986.40				

### Percentage of hunters reporting

50.8%	52.3%	42.9%	63.7%	60.2%	70%	70.2%
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## REPORT OF DEER KILLED

July 1, 1934 to June 30, 1936

## CAUSE

County	Accident	Trains	Dogs	Autos	Destroying Property	Found Injured	Cause Unknown	Killed Illegally	Wildcats	Totals
Hartford .....	2	..	6	13	5	1	1	8	4	40
New Haven .....	5	..	3	16	18	5	3	10	..	60
New London .....	3	..	3	15	31	10	3	8	..	73
Fairfield .....	3	2	5	20	12	6	7	6	..	61
Windham .....	..	3	14	21	48	5	12	7	2	112
Litchfield .....	9	6	36	40	99	17	11	38	..	256
Middlesex .....	3	..	5	15	13	4	9	17	..	66
Tolland .....	1	2	5	21	53	5	7	5	..	99
	26	13	77	161	279	53	53	99	6	767

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1934 to June 30, 1936

County	Violations of Fish Laws	Violations of Game Laws	Total Violations	Total Convictions	Fines Paid	Costs Paid	Total Fines and Costs
Hartford .....	18	20	38	33	\$129.00	\$341.13	\$ 470.13
New Haven .....	21	29	50	48	622.00	441.64	1,063.64
New London .....	10	10	20	20	468.00	251.22	719.22
Fairfield .....	21	32	53	52	387.00	534.40	921.40
Windham .....	3	22	25	25	220.00	194.20	414.20
Litchfield .....	16	45	61	60	577.00	618.29	1,195.29
Middlesex .....	3	15	18	15	110.00	135.44	245.44
Tolland .....	10	32	42	38	286.00	417.08	703.08
Totals .....	102	205	307	291	\$2,799.00	\$2,933.40	\$5,732.40

## LIST OF STREAMS IN CONNECTICUT

## ARRANGED BY COUNTIES

Showing Those Stocked With Trout by the State Board of Fisheries and Game  
1932 - 1936

Also Showing the Type of Stream and the Biological Rating\*  
as Well as the Kind of Trout Planted in Each Case

\* Type of stream is indicated by the following symbols: F—Feeder Brook, S—Small Stream, R—River.

Biological rating is based on brook trout as a standard. A—High, B—Good, C—Poor, D—Adverse conditions, Poll—Polluted.

Small numbers refer to mileage. Thus A4, B3 is a stream of which the upper 4 miles is excellent trout and the lower 3 miles "good" from the standpoint of brook trout.

## HARTFORD COUNTY (1)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Austin Bk.	Suffield, E. Granby	F	State Line Bk.		*					
Beach Bk.	Hartland	F	W. B. Farmington Riv.		*					
Belcher Bk.	Berlin	F	Mattabassett River		*					
Big Brook	Avon	F	Thompson Bk.		*					
Birch Mt. Bk.	Manchester	F	So. Br. Hockanum Riv.	C-1½	*					
Bradley Bk.	Granby	F	Morgan Bk.		*					
Buckhorn Bk.	Enfield	S	Scantic River	B-3¼	*	*				
Bunnell Bk., N. Br.	Burlington	S	Burlington Bk.		*	*				
Cannons Bk.	Granby, Suffield	F	Salmon Brook		*					
Cherry Bk.	Canton, Granby	S	Farmington Riv.		*	*				
Chidsey Bk.	Avon	F	Thompson Bk.		*					
Cold Bk.	Glastonbury	S	Roaring Brook		*	*				
Cold Spring Bk.	Berlin, Rocky Hill	F	Mattabassett Riv.	C-3	*					
Copper Mine Bk.	Burlington, Bristol	S	Pequabuck River	B-9	*	*				
Creamery Bk.	Granby	F	E. Br. Salmon Bk.		*					
Creamery Bk.	E. Granby	F	Shelden's Bk.		*					

## HARTFORD COUNTY (2)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Cuishman Bk.	Granby	F	E. Br. Salmon Bk.		*					
DeGray's Bk.	Suffield, E. Granby	F	Stony Bk.		*					
Devine's Bk.	Suffield	F	Stony Bk.		*					
Dickinson Creek	Glastonbury, Marlboro	S	Salmon River	C-8	*	*	*		*	
Dividend Bk.	Rocky Hill	S	Conn. River		*	*				
Dry Bk.	South Windsor	F	Scantic River	C-2	*					
Eight Mile River	Southington	S	Quinnipiac Riv.			*				
Farmington River	New Hartford, Canton, Burlington, Avon, Farm- ington, Simsbury, E. Granby, Windsor	R	Conn. Riv.	C-40		*		*		*
Freshwater Bk.	Enfield	S	Conn. River		*	*				
Frog Bk.	E. H., Glastonbury, Manchester	F	Keeney Cove		*					
Goff Bk.	Wethersfield, Rocky Hill	F	Conn. River		*					
Grannis Bk.	Bristol, Southington	F	Eight Mile River		*					
Hales Bk.	Glastonbury	S	Conn. River			*				
Hatchery Bk.	Berlin	S	Mattabassett River			*				
Hog Bk.	Rocky Hill	F	Conn. River		*					
Hop Brook	Canton, Simsbury	F	Farmington Riv.	B-6	*					
Howell Pond Bk.	Hartland	F	W. Br. Farmington Riv.	A-3	*					
Hyde Brook	Farmington	F	Farmington Riv.		*					
Jim's Bk.	Canton	F	Cherry Bk.		*					
Judd Bk.	Southington	F	Ten Mile River		*					
Kendell Bk.	Granby	F	Salmon Bk.		*					
Ketch Bk.	E. Windsor	F	Scantic River	A-4½	*					
Kettle Bk.	Windsor Locks	F	Conn. River		*					
Little Bk.	E. Granby	F	Muddy Bk.		*					
Mill Bk.	Windsor, Bloomfield	S	Farmington Riv.	C-5	*	*				
Minister Bk.	Simsbury	F	Farmington Riv.		*					
Misery Bk.	Southington	F	Quinnipiac Riv.		*					
Mix Bk.	Bristol, Southington	F	Eight Mile Riv.		*					
Morgan Bk.	Granby	F	E. Br. Salmon Bk.	C-1½	*					
Muddy Bk.	E. Granby	F	Salmon Bk.	B-3¾	*					

## HARTFORD COUNTY (3)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Muddy Bk.	Suffield	F	Stony Bk.		*					
Nod Bk.	Simsbury, Avon	F	Farmington Riv.		*					
Pewterpot Bk.	E. Hartford	F	Keeney Cove		*					
Polkville Bk.	Bristol	F	Copper Mine Bk.	B-3½	*					
Pumping Station Bk.	Berlin	F	Mattabasset Riv.		*					
Roaring Bk.	Farmington, Canton, Avon	F	Farmington Riv.	B-7½	*					
Roaring Bk.	Glastonbury	S	Conn. River		*	*	*	*		
Roaring Bk.	Southington, Wolcott	F	Eight Mile Riv.		*					
Salmon Bk.	E. Granby, Granby	S	Farmington Riv.	A-1¾	*			*		
Salmon Bk., E. Br.	Granby	S	Salmon Bk.	A-10½		*		*		
Salmon Bk., W. Br.	Granby, Hartland	S	Salmon Bk.	A-10½		*		*		
Salmon Bk.	Glastonbury	F	Conn. River		*					
Scantic River	Enfield, E. Windsor, S. Windsor	R	Conn. River	B-4, C-14				*	*	
Slab Gut Bk.	Glastonbury	F	Roaring Bk.		*					
Smith Bk.	Glastonbury	F	Hubbard Bk.		*					
Spencer Bk.	Suffield	F	Stony Bk.		*					
Spring Glen Bk.	East Windsor	F	Scantic River	C-1	*					
Stony Bk.	Suffield, E. Granby	S	Conn. River			*		*		
Stratton Bk.	Simsbury, Canton	S	Hop Bk.	A-4½		*				
Terry Brook	Enfield	S	Scantic Riv.	C-3	*	*				
Thompson Bk.	Avon	F	Farmington Riv.		*					
Trout Bk.	Plainville	F	Hamlin Pond		*					
Tumble Bk.	Bloomfield	F	Farmington Riv.		*					
Water Works Bk.	Windsor Locks	F	Conn. River		*					
Welden Bk.	Simsbury	F	Hop Brook		*					
Whittemore Bk.	Suffield	F	Muddy Bk.		*					
Wiggin Bk.	Avon	F	Nod Bk.		*					
Wild Cat Bk.	Burlington	F	Copper Mine Bk.		*					
Willow Bk.	E. Hartford	F	Hockanum River	D-3	*					
Zogg Bk.	Avon, Simsbury	F	Nod Brook	A-5½	*					

NEW HAVEN COUNTY (1)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Arethusa Bk.	Seymour	F	Kerite Cable Co. Pond		*					
Bladens Riv.	Seymour, Woodbridge	S	Naugatuck Riv.	C-5	*	*				
Branford Riv.	Branford, N. Branford	S	Long Island Sound	B-8		*				
Bronson Bk.	Beacon Falls	F	Naugatuck Riv.		*					
Church Bk.	Oxford	F	Little River		*					
Cotton Hollow Bk.	Naug., Bethany	S	Naugatuck Riv.	B-3½		*				
Eight Mile Bk.	Middlebury, Oxford, Southbury	S	Housatonic Riv.	B-10	*	*				
Farm River	Guilford, E. Haven, N. Branford	S	Long Island Sound	B 14				*		
Five Mile Bk.	Oxford	F	Housatonic Riv.	D-2½	*					
Hancock Bk.	Waterbury, Plymouth	S	Naugatuck Riv.			*				
Harbor Bk.	Meriden	F	Hanover Pond	C-7½	*					
Harbor Bk., E. Br.	Meriden	F	Harbor Bk.	D-¾	*					
Hop Bk.	Middlebury, Naug., Waterbury	S	Naugatuck Riv.	B-7½		*	*			
Hopp Bk.	Bethany	F	Bladen's Riv.	B-3½	*					
Jacks Bk.	Oxford	F	Little Riv.	B-3½	*					
Jermey Bk.	Southbury	F	Eight Mile Bk.	C-2	*					
Little Riv.	Oxford, Seymour	S	Naugatuck Riv.	B-3, D-3½	*	*				
Long Meadow Bk.	Middlebury	S	Long Meadow Pd.	B-6, D-1¾	*	*				
Long Meadow Pd. Bk.	Naugatuck	S	Naugatuck Riv.		*	*				
Mad River	Wolcott, Waterbury	S	Naugatuck Riv.	B-9		*				
Meetinghouse Bk.	Meriden, Wallingford	F	Quinnipiack Riv.	C-3½	*					
Mill River	Cheshire, Hamden, N. Haven, New Haven	S	Lake Whitney	B-17		*				
Muddy River	Wallingford, N. Haven	S	Quinnipiack Riv.	B-17		*		*		
Neck River	Madison	S	Long Island Sound	B-9½		*				
Prospect St. Bk.	Prospect, Naug.	S	Naugatuck Riv.	D-3		*				
Quinnipiack Riv.	Meriden, Cheshire, Southington	R	Long Island Sound		*	*		*		*
Rimmon Bk.	Beacon Falls, Seymour	F	Naugatuck Riv.	C-1½	*					
Shattuck Bk.	Naug., Middlebury	S	Hop Brook	C-2¾		*				
Six Mile Bk.	Oxford	F	Eight Mile Bk.	D-2	*					

NEW HAVEN COUNTY (2)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Sodom Bk.	Meriden	F	Hanover Pond	D-1½	*					
Spruce Bk.	Naug., Beacon Falls	S	Naugatuck Riv.			*				
Spruce Glen Bk.	Meriden, Wallingford	F	Meetinghouse Brook	D-1½	*					
Ten Mile River	Cheshire	S	Quinnipiac Riv.	B-6	*	*				*
Towantic Bk.	Oxford	F	Little Riv.	C-3	*					
Washing Bk.	Seymour	F	Bladen's Riv.		*					
Wepawaug River	Woodbridge, Orange, Milford	S	Long Island Sound	B-12		*				
West River	Bethany, Woodbridge, New Haven, W. Haven	S	New Haven Harbor			*				
West River	Guilford	S	Long Island Sound	B-10		*				
Wharton Bk.	Wallingford, No. Haven	S	Quinnipiac Riv.	C-6½		*				

NEW LONDON COUNTY

Adams Brook	Sprague	F	Little Riv.				*			
Amasa Main Bk.	N. Stonington, Preston	F	Indiantown Bk.		*					
Anguilla Bk.	Stonington, N. Stonington	S	Long Island Sound	A-4½	*	*				
Assekonk Bk.	N. Stonington	F	Shunock Bk.	C-3	*					
Austin Bk.	Bozrah	F	Gardner Bk.				*			
Ayers Bk.	Franklin	F	Beaver Bk.		*					
Beaver Bk.	Franklin, Sprague	S	Shetucket Riv.	A-5	*	*				
Beaver Bk.	Lyme, E. Lyme	S	Eight Mile Riv.	B-5½		*				
Beaver Dam Bk.	Groton	S	Hempstead Bk.			*				
Billings Bk.	Griswold, N. Stonington	F	Pachaug Pond	C-2, B-1½	*					
Bindloss Bk.	Groton	F	Mystic River	A-2	*					
Blackledge Riv.	Colchester	R	Salmon River	B-14¾			*			*
Blissville Bk.	Lisbon	S	Shetucket Riv.	A-4	*	*				
Burgess Bk.	Lebanon	F	Susquetonscut Bk.				*			
Church Bk.	Waterford	S	Thames River			*				
Cold Bk.	Franklin	F	Shetucket Riv.	C-1¾	*					
Copp's Bk.	Stonington	S	Long Island Sound	A-3, C-1¾	*	*				
Cranberry Meadow Bk.	East Lyme	S	Latimers Bk.	A-3		*				
Deep River	Colchester, Lebanon	S	Yantic River	A-5, B-2½	*					

NEW LONDON COUNTY (2)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Denison Bk.	Voluntown	S	Beachdale Pd.	B-3¼	*	*				
Dickinson Creek	Colchester	S	Salmon River	C-8				*		
Dixon Bk.	Bozrah, Lebanon	F	Yantic River				*			
Driscoll Bk.	Bozrah, Franklin	F	Yantic River		*					
Exeter Bk.	Lebanon	F	Bartlett Bk.		*					
Four Mile Riv.	E. Lyme, Old Lyme	S	Long Island Sound	B-7½			*	*		
Gardner Bk.	Bozrah	F	Yantic River	C-7			*			
Gold Mine Bk.	Norwich, Bozrah	S	Trading Cove Bk.		*	*				
Great Bk.	Ledyard, Groton	S	Long Island Sound	A-5, C-2	*	*				
Great Meadow Bk.	Voluntown	S	Pachaug Riv.	A-4, C-1	*	*				
Hammer Bk.	Norwich	F	Yantic River	A-2½	*					
Havey Bk.	Griswold	F	Clayville Pd.		*					
Hempstead Bk.	Groton	F	Great Brook	B-2½	*					
Hetchell Swamp Bk.	N. Stonington	F	Pendleton Hill Bk.				*			
Hinckley Bk.	Lebanon	F	Pease Bk.		*					
Hoxie Bk.	Lebanon	F	Pease Bk.		*		*			
Hunts Bk.	Waterford, Montville	S	Thames River	A-5	*	*	*	*		
Indiantown Bk.	Preston, Ledyard	S	Thames River				*	*		
Jeremy River	Colchester	S	Salmon River			*		*	*	*
Joe Clark Bk.	Ledyard	F	Poquetanuck Cove		*					
Jordan Bk.	Waterford	S	Long Island Sound	A-5	*	*	*			
Kahn Bk.	Bozrah	F	Yantic River		*					
Lampheres Bk.	Stonington	F	Whitfords Bk.	B-1¼	*					
Latimer Bk.	Montville, E. Lyme	S	Niantic River	A-9	*	*		*		
Little River	Sprague	S	Shetucket Riv.	A-16½, Poll. 4	*	*		*		
McCarthy's Bk.	Franklin	S	Beaver Bk.	A-3	*	*		*		
McGuire Bk.	Groton	S	Eccleston Bk.	B-3¼	*	*				
Meadow Bk.	Colchester	S	Jeremy River		*	*	*			
Mineral Spring Bk.	Bozrah	F	Gardner Bk.		*		*			
Mohegan Bk.	Montville	F	Thames River		*					
Mountain Bk.	Franklin	S	Beaver Bk.	A-1½	*	*				
Mount Misery Bk.	Voluntown	S	Beachdale Pond	A-5	*	*				
Myron Kinnie Bk.	Voluntown	S	Glasco Pond	A-2, C-2¼	*	*				
Norwichtown Bk.	Norwich	F	Hammer Bk.		*					

## NEW LONDON COUNTY (3)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Old River Farm Bk.	Sprague, Franklin	F	Shetucket Riv.		*					
Oxoboxo Bk.	Montville	S	Thames River	B-2, D-4½			*	*		
Pachaug River	Griswold, Voluntown	R	Quinnebaug	C-7	*	*				
Palmer Bk.	Griswold	F	Pachaug River	A-1½	*					
Pease Bk.	Lebanon, Bozrah	F	Yantic River	A-3, C-6	*		*			
Pendleton Hill Bk.	N. Stonington	S	Spaulding Pond	B-4½	*	*	*	*		
Polly Bk.	Bozrah, Lebanon	F	Yantic River				*			
Riel Bk.	Sprague	F	Beaver Bk.		*					
Rose Hill Bk.	Ledyard, Preston	F	Indiantown Bk				*			
Salmon River	Colchester	R	Conn. River	C-13			*			
Sandy Bk.	Montville, Waterford	S	Miller Pond				*			
Seth Williams Bk.	Ledyard	S	Whitfords Bk.	A-2¼, B-3¾						
Shunock Bk.	N. Stonington	S	Pawcatuck Riv.	B-3¾	*	*				
Silex Mine Bk.	N. Stonington	F	Long Pond	A-1¼			*			
Stickbridge Bk.	Franklin, Norwich	F	Yantic River	A-1	*					
Stony Bk.	Montville	S	Thames River	A-6	*	*				
Stony Bk.	Waterford	S	Niantic River	B-2		*				
Susquetonscut Bk.	Lebanon, Franklin, Bozrah	S	Yantic River	B-9	*	*	*			
Tadma Bk.	Bozrah	F	Trading Cove Bk.		*					
Ten Mile River	Lebanon, Columbia	S	Willimantic Riv.	B-2½, C-2			*			
Trading Cove Bk.	Montville, Norwich, Bozrah	S	Thames River	A-5¼	*	*				
Whitfords Bk.	Stonington, Groton, Ledyard	S	Mystic River		*	*				
Whittle Bk.	Montville	F	Gardner Lake		*					
Woodmansee Bk.	Griswold	F	Billings Bk.		*					
Wyassup Bk.	N. Stonington	S	Spaulding Pond	B-3½	*		*	*		
Yantic River	Lebanon, Norwich, Bozrah, Franklin	R	Thames River	C-2½, D-5			*	*		
Yawbux Bk.	N. Stonington	F	Shunock Bk.	A 2½	*					

## FAIRFIELD COUNTY (1)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Adams Bk.	Weston, Wilton	F	Saugatuck Riv., W. Br.		*					
Ayers Bk.	Stamford	F	Rippowam Riv.	C-2			*			
Ball Pond Bk.	New Fairfield	S	Candlewood Lake	C-3½		*			*	*
Barretts Bk.	Wilton	F	Comstock Bk.	C-3	*					
Bates Bk.	New Fairfield	F	Ball Pond Bk.	D-1	*					
Beardsleys Bk.	Monroe	F	Farmill River	D-1	*					
Black Bk.	Shelton	F	Farmill River	B-1¾	*					
Boehm Bk.	Shelton	F	Farmill River		*					
Booth Hill Bk.	Shelton	F	Isinglass Res.	D-¾	*					
Boys Half Way Riv.	Monroe	S	Housatonic Riv.	C-4	*	*				
Branchville Bk.	Redding	F	Norwalk River	C-1	*					
Cavanaugh's Bk.	Newtown	F	Housatonic Riv.		*					
Chestnut Hill Bk.	Wilton	F	Norwalk River	C-1½	*					
Comstock Bk.	Wilton	F	Norwalk River	B-5¾	*					
Copper Mine Bk.	Monroe	F	Simmons Bk.	C-1¼	*					
Corbett Bk.	Newtown	F	Pootatuck Riv.	B-1¼	*					
Country Club Bk.	Newtown	F	West Plain Bk.	D-1½	*					
Curtis Pond Bk.	Newtown	F	Pootatuck Riv.	C-3	*					
Deep Hollow Bk.	New Fairfield	F	Ball Pond Bk.	D-¾	*					
Dibbles Bk.	Bethel	F	Lime Kiln Bk.	C-2	*					
Eagan Bk.	Newtown	F	Pootatuck Riv.		*					
East Swamp Bk.	Bethel, Danbury	S	Still River	B-2½	*	*				
Farmill River	Shelton, Monroe, Stratford	S	Housatonic Riv.	B-6, C-4	*	*				
Farrar's Bk.	Trumbull	F	Pequonnock Riv.		*					
Foundry Pond Bk.	Newtown	F	Pootatuck Riv.	D-2	*					
Godfrey's Bk.	Weston	F	W. Br. Saugatuck	C	*					
Golf Grounds Bk.	Westport	F	Aspetuck Riv.	B-1	*					
Great Plain Bk.	Danbury	F	Beaver Bk.	C-3½	*					
Greenwoods Bk.	Sherman	F	Candlewood Lake	B-1¾	*					
Greenwoods Bk., S. Br.	Sherman	F	Greenwoods Bk.		*					
Harvey Pete Bk.	Shelton, Monroe	F	Farmill River	C-2	*					
Hattertown Bk.	Newtown	F	Gilberts Bk.		*					
Haviland Bk.	Stamford	F	Rippowam Riv.	B-4¾	*					

## FAIRFIELD COUNTY (2)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Hawley's Bk.	Weston, Easton	F	Saugatuck Riv.	B-2 $\frac{3}{4}$	*					
Hurd's Bk.	Monroe	F	Boys' Half Way River		*					
Jess Lewis Bk.	Newtown, Monroe	F	Pootatuck Riv.	C- $\frac{3}{4}$	*					
Lime Kiln Bk.	Bethel	S	Still River		*	*				
Lime Kiln Bk., E. Br.	Bethel, Newtown	F	Lime Kiln Bk.		*					
Lime Kiln Bk., N. Br.	Bethel, Newtown	F	Lime Kiln Bk.		*					
Little River	Redding	S	Saugatuck Riv.		*	*				
Means Bk.	Shelton, Monroe	S	Farmill River	C-5 $\frac{1}{2}$	*	*				
Mianus River	Stamford, Greenwich	R	Long Island Sound	B-16, C-2			*	*		*
Mianus Riv., E. Br.	Stamford	S	Mianus River	B-3, C-2 $\frac{3}{4}$			*	*		
Mill River	Fairfield, Easton	S	Long Island Sound	B-12, C-3		*				
Mirey Bk.	Danbury, Ridgefield	F	Still River	B-4 $\frac{1}{2}$	*					
Mopus Bk.	Ridgefield	F	Titicus Riv.	B 2, C-0.8	*					
Morgan Bk.	Newtown	F	Pootatuck Riv.		*					
Morrissey Bk.	Sherman	F	Housatonic Riv.	B-5 $\frac{3}{4}$	*					
Norwalk Riv.	Ridgefield, Redding, Norwalk, Wilton	R	Long Island Sound	B-13, C-7		*		*		*
Ondex Pond Bk.	Monroe	F	Farmill River		*					
Otter Bk.	Newtown	F	Housatonic Riv.	C-2	*					
Pequonnock Riv.	Trumbull, Monroe, Bridgeport	S	Long Island Sound	A-6, C-3		*		*		
Pequonnock R., W. Br.	Trumbull, Monroe	F	Pequonnock Riv.		*					
Pierson's Bk.	Newtown	F	Pond Bk.		*					
Pocono Bk.	Newtown	F	Pond Bk.		*				*	
Pond Bk.	Newtown	S	Housatonic Riv.	B-5 $\frac{1}{2}$	*	*			*	*
Poorhouse Bk.	Stamford	F	Rippowam Riv.	B-3 $\frac{1}{4}$	*					
Pootatuck Riv.	Newtown, Monroe	S	Housatonic Riv.	B-5, C-4	*	*				
Pumpkin Bk.	Stratford, Shelton	S	Housatonic Riv.	B-2, C-1 $\frac{1}{2}$	*	*				
Putnam Park Bk.	Bethel	F	Wolf Pit Bk.		*					
Red Mill Bk.	Westport	F	Saugatuck Riv.	C-1 $\frac{1}{4}$	*					
Ridgefield Bk.	Ridgefield	F	Norwalk Riv.	D-1 $\frac{1}{4}$	*					
Rippowam River	Stamford, N. Canaan	R	Long Island Sound	B-8, C-10 $\frac{1}{2}$			*	*		*
Rodericks Bk.	Newtown	F	Housatonic Riv.	C-1 $\frac{1}{8}$	*					
Sand Hill Bk.	Newtown	F	Halfway Riv.	C-1 $\frac{1}{4}$	*					

FAIRFIELD COUNTY (3)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Sandy Hook Bk.	Newtown	F	Pootatuck Riv.	C-1½	*					
Sasco Bk.	Westport, Fairfield	S	Long Island Sound	C-4		*				
Saugatuck Riv.	Westport, Weston, Red- ding, Bethel, Ridgefield	R	Long Island Sound	A-22		*				
Saugatuck Riv., W. Br.	Wilton, Weston, Westport	S	Saugatuck Riv.	B-5½		*				
School House Bk.	Weston	F	Saugatuck Riv.	C-1¾	*					
Scudder Bk.	New Fairfield	F	Ball Pond Bk.	C-1½	*					
Shadow Bk.	Ridgefield	F	Titicus Riv.	C-1	*					
Sharps Bk.	Shelton	F	Harvey Peet Bk.		*					
Simmons Bk.	Monroe	F	Halfway Riv.	C-¾	*					
Smith Pond Bk.	Monroe	F	Copper Mine Bk.	D-2	*					
Spectacle Bk.	Ridgefield, Wilton	F	Comstock Bk.		*					
Stony Bk.	Wilton, Norwalk, Westport	F	Saugatuck Riv.	B-2, C-1¾	*					
Titicus River	Ridgefield and N. Y.	S	Groton River New York	A 5½	*	*				
Trap Falls Bk.	Stratford, Shelton	F	Beaver Dam Res.		*					
Tunnel Bk.	Newtown	F	Cavanaugh's Pd.		*					
Wells Bk.	Shelton	F	Farmill River	C-1¾	*					
West Plain Bk.	Newtown	F	Pootatuck Riv.	C-4	*					
Whitlock Bk.	Monroe	F	Halfway River	C-1¼	*					
Widow Ball Bk.	New Fairfield	F	Ball Pond Bk.	C-1	*					
Wimisink Bk.	Sherman	F	Housatonic Riv.		*					
Wiskoskis Bk.	Shelton	F	Farmill River	D-¾	*					
Wolf Pit Bk.	Bethel	F	Wild Cat Bk.	C-2	*					

WINDHAM COUNTY

Abington Bk.	Pomfret	F	Mashamoquet Bk.	C-1, D-1	*					
Anderson Bk.	Brooklyn	F	Creamery Bk.		*					
Angell Bk.	Plainfield	F	Moosup Riv.		*					
Attawaugan Bk.	Killingly	F	Five Mile Riv.		*					
Backwater Bk.	Thompson	F	French River	B-1½	*					
Baptist Bk.	Thompson	F	Sunset Hill Bk.	B-¼, D-¾	*					

## WINDHAM COUNTY (2)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Bark Meadow Bk.	Pomfret	F	Durkee Bk.		*					
Barrett Bk.	Putnam, Woodstock,	F	Little River	A-1½	*					
	Pomfret									
Barrett Ledge Bk.	Pomfret	F	White Bk.	A-1½	*					
Bassett Bk.	Ashford	F	Mount Hope Riv.	B-1¾	*					
Beaver Dam Bk.	Eastford	F	Natchaug Riv.	A-3	*					
Bebbington Bk.	Ashford	F	Mount Hope Riv.	B-2¾	*					
Bennett Bk.	Canterbury	F	Kitt Bk.	B-1½	*		*			
Bigelow Bk.	Ashford, Eastford	F	Natchaug Riv.	A-11	*					
Blackmore Bk.	Thompson	F	Quandick Res.		*					
Blackwell Bk.	Pomfret, Brooklyn, Canterbury	S	Quinebaug Riv.	B-10¾	*	*		*		
Bosworth Bk.	Woodstock, Eastford	F	Bunsee Bk.	C-1	*					
Bradford Bk.	Woodstock	F	Safford Bk.	B-2	*					
Branch Bk.	Eastford	F	Bigelow Bk.		*					
Brown's Bk.	Sterling	F	Quaduck Bk.		*					
Bungee Bk.	Woodstock, Eastford	F	Still River	A-9¾	*					
Butts Bk.	Woodstock	F	Peake Bk.		*					
Cady Bk.	Putnam	F	Five Mile Riv.	A-6½	*		*			
Carpenter Bk.	Putnam	F	Quinebaug Riv.	A-2	*					
Cedar Swamp Bk.	Sterling	F	Moosup River	A-2¾	*					
Cedar Swamp Bk.	Woodstock	F	Red Head Meadow Bk.	C-1¼	*					
Cold Bk.	Windham, Franklin, Lebanon	F	Shetucket Riv.		*					
Cold Spring Bk.	Brooklyn, Canterbury	F	Blackwell Bk.		*		*			
Creamery Bk.	Brooklyn	F	Blackwell Bk.	A-2¼	*		*			
Crooked Bk.	Sterling	F	Moosup River		*					
Culver Bk.	Putnam	F	Quinebaug Riv.	B-2¾	*					
Darby Bk.	Canterbury	F	Kitt Bk.		*		*			
Darling Pond Bk.	Chaplin	F	Natchaug Riv.	C-½	*					
Davis Bk.	Plainfield	F	Ekonk Bk.		*					
Day Bk.	Pomfret	F	Mashamoquet Bk.	C-2½	*					
Deane Bk.	Canterbury	F	Peck Bk.		*					
Dixon Bk.	Sterling	F	Quaduck Bk.		*					
Eddy Bk.	Woodstock	F	Muddy Bk.		*					

## WINDHAM COUNTY (3)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Ekonk Bk.	Plainfield, Sterling	F	Moosup Riv.	A-6	*					
English Neighbor- hood Bk.	Woodstock	F	Muddy Bk.	B-2½	*					
Five Mile Riv.	Thompson, Killingly, Putnam	R	Quinebaug Riv.	C-12¼ (Poll. 3½)	*		*			
Floyd Brown Bk.	Thompson	F	Lower Pond	C-1½			*			
Fuller Bk.	Hampton	F	Little Riv.		*					
Gallup Bk.	Plainfield	F	Ekonk Bk.		*					
Gardner Bk.	Ashford	F	Mount Hope Riv.	B-1¾	*					
Gravelly Bk.	Woodstock	F	Muddy Bk.	D-2½	*					
Hampton Station Bk.	Hampton	F	Little Riv.		*					
Havens Ledge Bk.	Eastford	F	Still Riv.	A-1%	*					
Herridean Bk.	Woodstock	F	Chamberlain Pond	A-1%	*					
Horse Bk.	Plainfield	F	Mill Bk.	B-1¾, D-1¼ (Poll. 1¼)	*					
Janson Bk.	Thompson	F	Five Mile Riv.				*			
Jordan Bk.	Thompson	F	Quinebaug Riv.		*					
Kelly Bk.	Killingly	F	Five Mile Riv.	B-1½	*		*			
Kitt Bk.	Canterbury	S	Quinebaug Riv.	A-7½	*	*	*		*	
Knowlton Bk.	Ashford	F	Mount Hope Riv.	C-6	*					
Labelle Bk.	Killingly	F	Five Mile Riv.	B-1¾	*		*			
Larrabe Bk.	Windham	F	Shetucket Riv.		*		*			
Lathrop Bk.	Plainfield	F	Mill Bk.	A-3¼	*					
Lippitts Bk.	Putnam	F	Little Dam Tavern Bk.	D-1¾	*					
Lipps Bk.	Ashford	F	Knowlton Bk.		*					
Little River	Canterbury, Hampton, Scotland	R	Shetucket Riv.	A-16½, (Poll. 4)		*				
Little River	Putnam	F	Quinebaug Riv.		*					
Little Dam Tavern Bk.	Putnam	F	Quinebaug Riv.	B-3¾	*					
Long Branch Bk.	Thompson	F	French Riv.	B-3¼, C-1	*					
Long Bk.	Brooklyn	F	Quinebaug Riv.	A-2	*					
Lyon Bk.	Pomfret, Eastford	F	Mashamoquet Bk.	A-3¾	*					
Marcy Bk.	Woodstock, Mass.	F	Lebanon Bk., Mass.	B-3½	*					
Mary Brown Bk.	Putnam	F	Five Mile Riv.	C-4½, (Poll. ½)	*		*			

WINDHAM COUNTY (4)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Mashamoquet Bk.	Pomfret, Killingly	F	Quinebaug Riv.	A-3¼, C-3, B-1, C-2½	*					
Mashentuck Bk.	Killingly	F	Whetstone Bk.	B-2½	*					
Masons Bk.	Brooklyn	F	Blackwell Bk.	B-1¼			*			
Mill Bk.	Plainfield, Canterbury	S	Quinebaug Riv.	B-2, A-3½, B-1½	*	*				
Monty Bk.	Canterbury, Scotland	F	Little River	A-1	*					
Moosup River	Sterling, Plainfield	R	Quinebaug Riv.	B-6, C-5¼, D-11¼	*					
Moritz Bk.	Ashford	F	Knowlton Bk.		*					
Moss Bk.	Woodstock	F	Muddy Bk.		*					
Mount Hope Riv.	Ashford, Mansfield	S	Natchaug Riv.	B-4¾, C-16	*					
Mt. Hope Riv., E. Br.	Ashford	F	Mount Hope Riv.	B-3¾	*					
Muddy Bk.	Woodstock	S	Roseland Lake	DC-3½, A-3½, B-2¼, D-3	*	*				
Munson Bk.	Thompson	F	Five Mile Riv.	C to D-1¾			*			
Murphy Bk.	Hampton	F	Bigelow Bk.		*					
Natchaug Riv.	Eastford, Chaplin, Windham	R	Willimantic Riv.	A-14		*				*
Nightingale Bk.	Pomfret	F	Mashamoquet Bk.		*					
North Potter Bk.	Sterling	F	Quaduck Bk.		*					
Obwebetuck Bk.	Windham, Lebanon	F	Shetucket Riv.	C-1½			*			
Peckham Bk.	Woodstock	F	Muddy Bk.		*					
Pine Bk.	Brooklyn	F	Quinebaug Riv.	B-2	*					
Potash Bk.	Windham	F	Shetucket Riv.	A-3	*		*			
Prospect Hill Bk.	Windham, Lebanon	F	Obwebetuck Bk.	C-2¼			*			
Quaduck Bk.	Sterling, Killingly	S	Moosup Riv.		*	*				
Quaker Meetinghouse Brook	Pomfret	F	Day Bk.	C-3¾	*					
Quinebaug Riv.	Killingly, Thompson, Putnam, Canterbury, Brooklyn, Plainfield	R	Thames River	D-46, C-3¾ (Poll. 49¼)				*		*
Rainville Bk.	Brooklyn	F	Quinebaug Riv.		*					
Red Head Meadow Bk.	Woodstock	F	Bungee Bk.	B-1½	*					
Reed Bk.	Eastford, Chaplin	F	Natchaug Riv.	D-¾	*					
Rhodes Bk.	Thompson	F	Janson Bk.	A-2	*					

WINDHAM COUNTY (5) — LITCHFIELD COUNTY (1)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Robbins Bk.	Thompson	F	Stump Pond	C-3	*					
Rocky Bk.	Thompson	F	Five Mile Bk.		*					
Sandy Bk.	Brooklyn	F	Blackwell Bk.	A-2	*					
Sap Free Run Bk.	Pomfret	F	Mashamoquet Bk.		*					
Shetucket River	Windham	R	Thames River					*		
Shunway Bk.	Thompson	F	Quinebaug Riv.	B-2	*					
Smith Bk.	Canterbury, Scotland	F	Little River	B-¾	*					
Snake Meadow Bk.	Killingly, Plainfield	S	Moosup River	A-6		*				*
Spaulding Brook	Woodstock	F	Muddy Bk.	D-3	*					
Spencer Pond Bk.	Windham	F	Shetucket Riv.				*			
Squaw Hollow Bk.	Ashford	F	Knowlton Bk.	B-1½	*					
Still River	Eastford, Woodstock	S	Natchaug Riv.	A-1½, D-4, C-4½	*					
Stoud Bk.	Thompson	F	Baptist Bk.	A-2¼	*					
Sugar Bk.	Plainfield	F	Quinebaug Riv.	B-2½	*		*			
Tatnic Bk.	Brooklyn, Canterbury	F	Blackwell Bk.	A-3, (Poll. 3)	*		*			
Taylor Bk.	Woodstock	F	Mill River		*					
Tillinghast Bk.	Killingly	F	Quaduck Bk.		*					
Titus Bk.	Sterling	F	Quaduck Bk.		*					
Turner Bk.	Chaplin	F	Natchaug Riv.	B-1¾	*					
Wade Bk.	Hampton, Pomfret	F	Blackwell Bk.	B-3¾	*					
Weaver Bk.	Woodstock	F	Lyon Bk.	C-3	*					
Wheatons Bk.	Potnam, Thompson	F	Little River	C-2¼	*					
Whetstone Bk.	Killingly	F	Quinebaug Riv.	D-5¼, C-1¼ (Poll. 5½)	*					
White Bk.	Pomfret, Brooklyn	F	Quinebaug Riv.	C-1½, B-2¼	*					
Wolf Den Bk.	Pomfret	F	Mashamoquet Bk.	A-2	*					

LITCHFIELD COUNTY

Allen Bk.	Woodbury	F	Weekeepeemee Riv.		*					
Aspetuck R. E. Br.	New Milford, Washington	S	Aspetuck Riv.	B-3	*					
Aspetuck R. W. Br.	New Milford, Kent	S	Aspetuck Riv.	B-11½	*					
Austin Bk.	New Milford, Kent	F	Housatonic Riv.	B-2, C-3	*					
Bakersville Bk.	Torrington, New Htfd.	F	Nepaug River		*					

LITCHFIELD COUNTY (2)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Baldwin Bk.	New Milford	F	Aspetuck R., E. Br.		*					
Bantam R., Outlet of Bantam Lake	Morris, Litchfield, Washington	S	Shepaug River		*	*	*	*		
Bantam R., Trib. to Bantam Lake	Litchfield, Torrington, Goshen	S	Bantam Lake		*	*	*			
Bantam R., W. Br.	Litchfield, Goshen	S	Bantam River	A-7¼	*					
Beach Hill Bk.	Colebrook	F	Farmington R., W. Br.		*					
Beaver Pond Bk.	Morris	F	Sod Dam Res.	C-3	*					
Beckley Pond Bk.	Norfolk, Winchester	F	Mad River	B-2¼	*					
Beckwith Bk.	New Hartford	F	Nepaug River		*					
Bee Bk.	Washington, Warren	F	Shepaug Riv.	A-2, B3¼	*		*			
Blackberry Riv.	North Canaan, Norfolk	S	Housatonic Riv.	A-10	*					*
Branch Bk.	Watertown, Thomaston	S	Naugatuck Riv.		*	*	*	*		
Bull Mt. Bk.	Kent, New Milford	F	Austin Bk.	C-2	*					
Bullymuck Bk.	New Milford	F	Housatonic R.	D	*					
Burton Bk.	Salisbury	S	Factory Bk.	D	*					
Butternut Bk.	Litchfield	F	Bantam River	B-5	*					
Butternut Bk., W. Br.	Litchfield	F	Butternut Bk.	B-3½	*					
Camp Bk.	Roxbury	F	Shepaug River		*					
Camp Pond Bk.	Norfolk	F	Blackberry Riv.	B-2	*				*	
Caramel Hill Bk.	Bethlehem, Woodbury	F	Weekeepeemee Riv.	C-5	*					
Carsh Bk.	Sharon	F	Housatonic Riv.	A-4½	*					
Cider Mill Bk.	Bridgewater	F	Housatonic Riv.	C-3½	*					
Clapboard Oak Bk.	Bridgewater	F	Housatonic Riv.	B-2	*					
Clark Bk.	Woodbury	F	Nonewaug Riv.		*					
Cobble Bk.	Kent	F	Housatonic Riv.	B-2, C-1	*		*			
Colebrook Bk.	Colebrook, Winchester	F	Indian Meadow Bk.	B-3½	*					
Duming Bk.	Norfolk	F	Blackberry Riv.		*					
East Morris Bk.	Morris, Watertown	F	Wigwam Res.	C-3½	*					
Farmington R., W. Br.	Colebrook, Barkhamsted, Hartland, N. Hartford	R	Farmington R.	B-6, C-7½	*	*	*	*	*	*
Fenn. Bk.	Watertown	F	Wigwam Res.	C-2	*					
Fox Bk.	Goshen	F	Ivy Mt. Bk.	B-3	*					
Frank Atwood Bk.	Woodbury	F	Nonewaug Riv.		*					

## LITCHFIELD COUNTY (3)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Fuller Mt. Bk.	Kent	F	Housatonic Riv.		*					
Furnace Bk.	Cornwall	F	Housatonic Riv.	A-5½	*		*			
Great Bk.	New Milford	F	Housatonic Riv.	D	*					
Gulf Stream	Torrington, Litchfield	F	Naugatuck Riv.	C	*					
Guna Bk.	Sharon	F	Housatonic Riv.	A-3¾	*		*			
Gunn Bk.	Cornwall	F	Housatonic Riv.	C-2½	*		*			
Hall Meadow Bk.	Torrington, Norfolk Goshen, Winchester	S	Naugatuck R., W. Br.	A-8	*	*				
Hancock Bk.	Plymouth, Waterbury	S	Naugatuck Riv.	B-3¾	*	*				
Harvey Bk.	Woodbury	F	Nonewaug Riv.		*					
Hill Bk.	Litchfield	F	Bantam Riv.		*					
Housatonic Riv.		R	Long Island Sound			*		*		*
Indian Meadow Bk.	Winchester	F	Mad River	B-2	*					
Ivy Mt. Bk.	Goshen	F	Bantam Riv.	A-9	*					
Jacks Bk.	Roxbury	F	Shepaug Riv.	B-5	*		*			
Kent Falls Bk.	Kent, Warren	S	Housatonic Riv.	A-4	*	*	*			
Lake Waramaug Bk.	Warren	F	Lake Waramaug	C-5	*					
Lenevig Bk.	Roxbury, Washington	F	Shepaug Riv.	B-3¾	*		*			
Levenworth Bk.	New Milford	F	Aspetuck R., E. Br.		*					
Lewis Atwood Bk.	Woodbury, Watertown	F	Nonewaug Riv.		*					
Liners Bk.	Cornwall	F	Housatonic Riv.		*					
Little Jacks Bk.	Roxbury	F	Jacks Bk.		*					
Little Stony Bk.	Kent	F	Housatonic Riv.		*					
Lockwood Pond Bk.	Watertown	F	Steele Bk.	C-1½	*					
Loon Bk.	Colebrook, Norfolk	F	Sandy Bk.	B-5½	*					
Lovers Lane Bk.	Torrington	F	Nickle Mine Bk.	B-2½	*					
Macedonia Bk.	Kent, Sharon	S	Housatonic Riv.	A-5¼		*	*	*		*
Mad River	Winchester, Norfolk	F	Still River	B-5	*					
Mallory Bk.	Washington	F	Shepaug River	B-3	*					
Marandus Bk.	New Hartford	F	Nepaug River		*					
Marshepaug Riv.	Goshen, Litchfield	F	Shepaug Riv., E. Br.	B-5	*					
Mill Bk.	Winchester, Colebrook, Norfolk	S	Mad River	A-7	*					
Mill Bk.	Sharon and N. Y.	F	Webatuck Creek, N. Y.	A-5	*					

## LITCHFIELD COUNTY (4)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Moose Horn Bk.	Thomaston, Litchfield	F	Wigwam Res.		*					
Moose Horn Bk.	Roxbury	F	Shepaug Riv.	B-2	*		*			
Morey Bk.	Sharon, Kent	F	Housatonic Riv.		*					
Morgan Bk.	Barkhamsted	F	Greenwood Pd.	C-4	*					
Morrissey Bk.	New Milford	F	Housatonic Riv.		*					
Mt. Tom Pd. Bk.	Litchfield	F	Hill Brook		*					
Mudge Pond Bk.	Sharon	F	Indian Pond Bk.	D	*					
Naugatuck R., E. Br.	Winchester, Torrington	S	Naugatuck Riv.	B-6½	*	*				
Naugatuck R., W. Br.	Torrington	S	Naugatuck Riv.	B-2½	*	*		*		*
Nepaug River	New Hartford, Winches- ter, Torrington	S	Nepaug Res.	A-9	*	*				
Nickel Mine Bk.	Torrington, Goshen	F	Naugatuck R., W. Br.	D-5	*					
Nonewaug Ext. Bk.	Woodbury	F	Nonewaug Riv.	B-5	*					
Nonewaug River	Bethlehem, Woodbury, Watertown	S	Pomperaug Riv.	B-8	*	*				
Norfolk Bk.	Norfolk	F	Blackberry Riv.	B-2	*					
North Bk.	New Hartford	F	Nepaug Riv.		*					
North Flanders Bk.	Kent	F	Housatonic Riv.		*					
North Kent Bk.	Kent	S	Housatonic Riv.		*	*				
Nylbs Bk.	Morris	F	Bantam Riv.		*					
Perry Falls Bk.	Cornwall	F	Housatonic Riv.		*					
Pierce Bk.	Roxbury	F	Shepaug Riv.		*					
Pine Swamp Bk.	Sharon	F	Housatonic Riv.	B-1	*					
Pitch Bk.	Litchfield, Morris	F	Sod Dam Res.		*					
Pomperaug Riv.	Woodbury, Southbury	R	Housatonic Riv.	C-12	*	*		*		*
Potter Bk.	Cornwall	F	Housatonic Riv.	B-1½	*		*			
Reichenback Bk.	Woodbury	F	Nonewaug Riv.		*					
Riga Bk.	Salisbury	S	Salmon Creek	A-2¾	*	*				
Riley Swamp Bk.	Winchester	F	Park Pond	C-2½	*					
Roaring Bk.	Norfolk, No. Canaan	F	Blackberry Riv.		*					
Roxbury Bk.	Roxbury	F	Shepaug Riv.	C-2¾	*		*			
Sandy Bk.	Colebrook, Norfolk	S	Farmington R., W. Br.		*	*				
Saw Mill Bk.	Woodbury	F	Nonewaug Riv.		*					
Second Hill Bk.	Bridgewater, Roxbury	F	Shepaug Riv.	D-2½	*					

## LITCHFIELD COUNTY (5)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Seeley Bk.	Litchfield	F	Sod Dam Res.	B-3	*					
Shad Road Bk.	Watertown	F	Branch Bk.		*					
Shears Bk.	Morris, Washington	F	Bantam Riv.		*					
Shepaug Riv.	Washington, Roxbury, Litchfield, Warren, Cornwall, Southbury	R		A-24, C-3	*	*	*	*		*
Shepaug Riv., E. Br.	Goshen, Litchfield	F	Shepaug Riv.	A-4½	*					
Shogum Bk.	Kent	F	Housatonic Riv.	C-1½	*					
Slocum Bk.	Colebrook	F	Farmington R., W. Br.	B-1	*					
South Nepaug Bk.	New Hartford	F	Nepaug River		*					
Spalding Bk.	Norfolk	F	Blackberry Riv.		*					
Spruce Bk.	Litchfield	F	Naugatuck Riv.	A3¾	*					
Spruce Bk.	New Hartford	F	Nepaug River		*					
Spruce Glen Bk.	Salisbury	S	Salmon Ck.	B-4		*				
Steele Bk.	Watertown, Waterbury	F	Naugatuck R.	D-7	*					
Toby Pond Bk.	Norfolk	F	Spaulding Bk.	A-1½	*					
Torrington Bk.	Torrington, New Htfd	F	Bakersville Bk.	B-3	*					
Town Farm Bk.	New Milford, Bridgewater	F	Housatonic Riv.	D	*					
Turrill Bk.	Roxbury	F	Shepaug River		*					
Viningram Bk.	Washington	F	Shepaug River	A-2¾	*		*			
Weekeepeemee Riv.	Woodbury, Bethlehem	S	Pomperaug Riv.	A-8	*	*				
West Norfolk Bk.	Norfolk	F	Blackberry Riv.		*					
West Side Pond Bk.	Goshen	F	West Side Pond	A-2	*					
Whitting River	No. Canaan, Norfolk	S	Blackberry Riv.	A-3	*	*				
Wickwire Bk.	Canaan, Cornwall	F	Housatonic Riv.	D	*		*			

## MIDDLESEX COUNTY

Allyn's Bk.	Durham	S	Coginchaug Riv.		*	*				
Asmuns Bk.	Durham	S	Sawmill Bk.		*	*				
Balls Bk.	Durham	S	Allyn's Mill Pond		*	*				
Beaver Bk.	Haddam	S	Mill River	C-2	*	*				
Bible Rock Bk.	Haddam, Middletown	S	Conn. River		*	*				
Birch Mill Bk.	Durham	S	Fowler Bk.		*	*				

## MIDDLESEX COUNTY (2)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Boones Bk.	Westbrook	S	Patchogue Riv.		*	*				
Buck Bk.	Portland	F	Portiand Res.	C-1½	*					
Burdicks Bk.	Westbrook	F	Patchogue Riv.		*					
Burr Bk.	Chester	F	Pattaconk Bk.		*					
Camp Stewart Bk.	East Hampton, Colchester	F	Salmon River						*	
Candlewood Hill Bk.	Haddam	S	Ponset Bk.	B-3, C-2	*	*				
Carr Bk.	Portland	S	Conn. River	B-4½	*	*				
Cattle Lot Bk.	E. Hampton	F	Dickinson Creek	C-3	*					
Chatfield Hollow Bk.	Killingworth	S	Hammonasset Riv.	B-4	*	*				
Clark Creek	Haddam	S	Conn. River	D-2½	*	*				
Coginchaug Riv.	Durham, Middletown, Middlefield	S	Conn. River	B-14	*	*		*		*
Cox Bk.	Portland	S	Conn. River		*	*				
Cream Pot Bk.	Durham	F	Coginchaug Riv.		*	*				
Deep River	Saybrook, Chester	S	Conn. River	B-3, C-2	*	*				
Eight Mile Riv.	East Haddam	S	Conn. River	B-9			*	*		
Elbow Bk.	East Hampton	F	Salmon River		*	*				
Ellen Doyle Bk.	Middlefield	F	Coginchaug Riv.	C-1	*					
Fishing Bk.	Old Saybrook	S	Oyster River	D-2½		*	*			
Flat Bk.	East Hampton	F	Salmon River		*	*				
Fowler Bk.	Durham	S	Allyn's Mill Pond		*	*				
Gilberts Bk.	Middletown	F	Sumner Bk.		*	*				
Great Bk.	Chester, Haddam	S	Pattaconk Bk.	C-4	*	*				
Great Hill Bk.	Portland, E. Hampton	F	Conn. River	C-2	*	*				
Green River	East Hampton	S	Pine Bk.	B-4	*	*				
Hales Bk.	Portland	S	Conn. River	B-3½	*	*				
Hans Bk.	Middlefield	F	Coginchaug Riv.	C-1½	*	*				
Harris Bk.	Middletown	F	Sumner Bk.		*	*				
Heft Bk.	Haddam, Killingworth	F	Menunketesuck Riv.		*	*				
Hemlock Bk.	East Haddam	S	Roaring Bk.		*	*				
Hersig Bk.	Durham	S	Allyn's Mill Pond		*	*				
Hurd Bk.	Saybrook	F	Ward Bk.		*	*				
Indian River	Clinton, Killingworth	S	Long Island Sound	B-3, C-2	*	*				
Lampes Bk.	Chester	F	Burr Bk.		*	*				

MIDDLESEX COUNTY (3) — TOLLAND COUNTY (1)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Laurel Bk.	Middlefield, Middletown	F	Coginchaug Riv.	D-2	*					
Long Hill Bk.	Middletown	F	Sumner Bk.	C-3	*					
Menunketesuck Riv.	Killingworth, Clinton Westbrook	S	Plane Bk.	B-9	*	*				
Mine Bk.	East Hampton	S	Conn. River	C-2½	*	*				
Mine Bk.	Portland	S	Reservoir Bk.		*	*				
Muddy Bk.	East Haddam	S	Eight Mile Riv.		*	*				
Muddy Riv.	Essex	F	Falls Bk.		*	*				
Muddy Gutter Bk.	East Hampton	S	Pocotopaug Ck.	B-1	*	*				
Parmalee Bk.	Durham	S	Coginchaug Riv.		*	*				
Patchogue Bk.	Westbrook	S	Long Island Sound	C-5	*	*				
Pine Bk.	East Hampton, Haddam	S	Salmon River	B-8	*	*				
Ponset Bk.	Haddam	S	Conn. River	B-5	*	*				
Reservoir Bk.	Portland	S	Conn. River	B-3	*	*				
Salmon River	E. Haddam, E. Hampton, Haddam	R	Conn. River	C-13	*	*		*	*	
Salt peter Bk.	Haddam	S	Ponset Bk.	C-2	*	*				
Saw Mill Bk.	Durham	S	Coginchaug Riv.	C-4	*	*				
Soestrom Bk.	East Hampton	F	Salmon River		*	*				
Sumner Bk.	Middletown, Durham	S	Rubber Mill Pd.	C-6	*	*				
Tiffany Bk.	Essex	F	Mud Bk.		*	*				
Trout Bk.	Westbrook	S	Patchogue Riv.	C-2	*	*				
Wadsworth Bk.	Durham	S	Hersig Bk.	C-4	*	*				
Ward Bk.	Saybrook, Essex	F	Falls River		*	*				
Water House Bk.	Chester	F	Pattaconk Bk.	D-2	*	*				

TOLLAND COUNTY

Abbey Bk.	Ellington, Somers	S	Scantic Riv.	A-3½	*	*				
Aborn Bk.	Ellington	F	Broad Bk.	C-1½	*	*				
Alden Bk.	Stafford	S	Furnace Bk.	B-3	*	*				
Atwoodville Bk.	Mansfield	F	Mt. Hope Riv.	C-¾	*	*				
Avery Bk.	Somers	S	Scantic Riv.	D-¾	*	*				
Bahler's Bk.	Ellington	F	Broad Bk.	C-1½	*	*				

## TOLLAND COUNTY (2)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Belding Bk.	Ellington	F	Hockanum Riv.	B-1	*					
Blackman's Bk.	Andover	F	Hop River	B-1 $\frac{3}{4}$	*					
Bolton Pond Bk.	Bolton, Coventry	F	Hop River	D-1 $\frac{1}{2}$	*					
Bone Mill Bk.	Ellington, Tolland	F	Willimantic Riv.	B-1 $\frac{3}{4}$	*					
Brandy Bk.	Stafford	F	Roaring Bk.	C- $\frac{3}{4}$	*					
Broad Bk.	Ellington, E. Windsor	S	Scantic Riv.	A-1, B-3	*	*				
Broll Bk.	Vernon	F	Ogden Bk.	C-1	*					
Burnap Bk.	Hebron, Andover, Bolton	S	Hop River	B-1 $\frac{1}{2}$ , C-2 $\frac{1}{2}$	*	*				
Cedar Swamp Bk.	Mansfield, Willington	F	Weaver Bk.	C-4	*					
Cemetery Bk.	Tolland	F	Meacham's Bk.	B-2 $\frac{1}{2}$	*					
Charter's Bk.	Ellington, Tolland	F	Meacham's Bk.	A-3 $\frac{1}{2}$	*					
Charter's Bk.	Tolland	F	Skungamaug Riv.	B-1	*					
Clarks Bk.	Vernon	F	Tancanhoosen Riv.	C-1 $\frac{1}{2}$	*					
Codfish Falls Bk.	Willington, Mansfield	F	Fenton River	B-2	*					
Columbia Lake Bk.	Columbia	F	Hop River	C-1	*					
Conant Bk.	Mansfield	F	Fenton River	B-3	*					
Crystal Lake Bk.	Stafford	F	Middle River	C-3 $\frac{1}{2}$	*					
Delphi Bk.	Stafford	S	Stafford Res.	A-1 $\frac{1}{2}$	*	*				
Dunham Lake Bk.	Mansfield	F	Willimantic Riv.	C-1 $\frac{1}{4}$	*					
Eagleville Bk.	Mansfield	S	Willimantic Riv.	C-2 $\frac{3}{4}$	*	*				
End Bk.	Willington, Ashford	F	Fenton River	D-1 $\frac{1}{4}$	*					
Fawn Bk.	Hebron, Andover	S	Blackledge Riv.	A-8 $\frac{1}{2}$	*					
Fawn Bk., W. Br.	Hebron	F	Fawn Bk.	B-4 $\frac{1}{2}$	*					
Fenton River	Mansfield	R	Natchaug Riv.	B-13	*	*				
George's Bk.	Willington	F	Fenton River	B-1 $\frac{1}{2}$	*	*				
Giffords Bk.	Columbia	S	Ten Mile Riv.	B-2 $\frac{3}{4}$	*	*				
Gillette's Bk.	Somers	S	Avery Bk.	B-2, C-3	*	*				
Ginger Bk.	Stafford	F	Shady Bk.	C-1 $\frac{3}{4}$	*					
Grape Vine Bk.	Tolland	F	Willimantic Riv.	B-2	*					
Gulf Stream	Somers	S	Scantic Riv.	A-2 $\frac{1}{2}$ , B-2	*	*				
Hanks Bk.	Mansfield	F	Fenton River	C-1 $\frac{1}{2}$	*					
Hemlock Bk.	Coventry	F	Skungamaug Riv.	C-1 $\frac{1}{2}$	*					
Hockanum Riv.	Vernon, Ellington, Manchester, E. Hartford	R	Conn. River	D-19	*					

## TOLLAND COUNTY (3)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Hop River	Andover, Coventry, Columbia, Bolton	R	Willimantic Riv.	C-10	*	*				
Howard Crandells Bk.	Tolland	F	Skungamaug Riv.		*					
Jeremy River	Hebron	S	Salmon River	A-6			*			
Kalis Bk.	Tolland	F	Skungamaug Riv.		*					
Keenes Bk.	Willington	F	Roaring Bk.	A-2½	*					
Kidder Bk.	Willington	F	Fenton River		*					
Kimball's Bk.	Ellington	F	Broad Bk.	B-2	*					
Kings Bk.	Mansfield	S	Eagleville Bk.		*	*				
Kraniski Bk.	Somers	F	Scantic River		*					
Larson Bk.	Tolland	F	Skungamaug Riv.		*					
Lee Bk.	Coventry	F	Skungamaug Riv.	C-1	*					
Macht Bk.	Columbia	S	Hop River	B-1¾	*					
Massinger Bk.	Andover	S	Bishop's Bk.	D-¾		*				
May's Bk.	Union	F	Hamilton Res., Mass.	B-1½	*					
McIntyre's Bk.	Stafford	F	Crystal Lake Bk.	C-2	*					
Meacham's Bk.	Ellington, Tolland	S	Shenipsit Lake	A-4	*	*	*		*	
Middle River	Stafford	S	Willimantic Riv.	C-5½	*	*		*		
Mitchell's Bk.	Stafford	F	Middle River	C-2	*					
Mount Hope Riv.	Mansfield, Union, Ashford	S	Natchaug Riv.	B-8	*	*				
Muddy Bk.	Ellington	F	Broad Bk.	B-2	*					
Ogden Bk.	Vernon	F	Hockanum Riv.	B-1½	*					
Pease's Bk.	Somers	F	Abbey Bk.	C-1½	*					
Peck's Bk.	Ellington, E. Windsor	S	Ketch Bk.	B-2	*	*				
Pinney Bk.	Ellington	F	Marsh Bk.		*					
Polk Hill Bk.	Tolland	F	Skungamaug Riv.	B-1, C-1	*					
Raymond Bk.	Hebron	S	Salmon Riv.	B-5	*	*				
Roaring Bk.	Willington, Stafford, Union	S	Willimantic Riv.	A-9		*				
Ruby Bk.	Willington	F	Roaring Bk.	D-¾	*					
Saw Mill Bk.	Mansfield	F	Natchaug Riv.	B-4	*					
Scantic River	Somers, Enfield, East Windsor, South Windsor	R	Conn. River	B-4, C-14		*				*
Schamade Bk.	Somers	F	Scantic Riv.	C-1½	*					

## TOLLAND COUNTY (4)

Name of Brook	Town	Type	Trib. to	Rating	Brook Fingerling	Brook Adult	Brown Fingerling	Brown Adult	Rainbow Fingerling	Rainbow Adult
Skungamaug Riv.	Tolland, Coventry, Andover	R	Hop River	A-13	*	*				
Staddle Bk.	Andover	F	Hop River	B-3	*					
Still Bk.	Stafford and Mass.	S	Saw Mill Bk.	A-1½	*	*				
Stoughton Bk.	Stafford, Union	F	Roaring Bk.	C-3¼	*	*				
Tancanhoosen Riv.	Vernon	S	Hockanum Riv.	A-3, C-2	*	*				
Ten Mile River	Columbia, Lebanon	S	Willimantic Riv.	C-2, B-2½	*	*				
Thrasher Bk.	Somers	S	Scantic Riv.	C-3	*	*				
Tillinghast's Bk.	Vernon	F	Ackerley Pd.	D-1½	*	*				
Tolland Res. Bk.	Tolland	F	Polk Hill Bk.		*	*				
Town Bk.	Tolland, Vernon	F	Walker Res.	B-1¼	*	*				
Tucker Bk.	Vernon	F	Tancanhoosen Riv.	B-1½	*	*				
Watchaug Bk.	Somers	F	Scantic Riv.	B-1¼	*	*				
Weaver Bk.	Mansfield	F	Eagleville Pd.	C-2	*	*				
Willimantic Riv.		R	Shetucket Riv.	B-12, C-9½	*	*		*	*	
Woods Stream	Somers	S	Scantic Riv.		*	*				

# LIST OF PONDS AND LAKES IN CONNECTICUT

Stocked with Pond Fishes by the State Board of Fisheries and Game  
1932 - 1936

## ARRANGED BY COUNTIES

Showing the Kinds of Fishes Known to Inhabit Each Stocked Pond or Lake\* and Indicating the Kind of Fishes Planted 1932 - 1936\*\*

Ponds under State Regulation are Indicated by (1) Spawning Areas established and marked with posters. (2) Fishing subject to special regulations (see posters).

### HARTFORD COUNTY

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Arnold Pond	Farmington				**				**				
Batterson Park Pond	Farmington		*		**				**	**			
Birge Pond	Bristol		*	**	**				*				
Boggie Stowe Pond	Manchester				**				*				
2. Bragg Pond	Hartland				*								**
Broad Brook Pond	East Windsor		*		**				**	*	*		
Cedar Swamp Pond	Bristol, Wolcott	**	**	**	**				**	**	**	**	
2. Cherry Park Pond	Avon, Canton		*		**				**	*	*		
Clark Pond	Berlin				**								
Compounce Lake	Southington	*	*		**				*	*	*		
		**	**	**	**				**	**	**		

HARTFORD COUNTY (2)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
1. Crescent Lake	Enfield	**	*		*				**	*	*		
Daniels Cove	East Granby				*				**				
Diamond Lake	Glastonbury		*	**	*	*	*		**				
Dorrs Pond	New Britain				*	*	*						
Freshwater Pond	Enfield		*		*	*	*		*	*	*		
Griswold Pond	Wethersfield		*		*	*	*		*		*		
Hamlin Pond	Plainville		*		*	*	*		*	*	*		
Kirchhof Pond	East Windsor		**		*	*	*		**	**	**		
Little Pond	Windsor		*		*	*	*		**	*	*		
2. Manitoak Lake	Granby	*	*	**	**	*	*		**				
Marsh Pond	East Granby		*	**	*	*	*		**	*	*		
Oil City Pond	Windsor	*	*	**	*	*	*		*				
2. Old Marsh Pond	Bristol, Plymouth		*		*	*	*		*	*	*		
Paper Goods Pond	Berlin	**	**	**	**	*	*		**	**	**		
Peat Works Pond	Berlin, Meriden		*	**	*	*	*		*	*	*		
Pilgard's Pond	Marlboro		**	**	**	*	*		**				

HARTFORD COUNTY (3)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Plantsville Pond	Southington	**	*		*				*				
Railroad Pond	Berlin	*	**		*				**	*	*		
Reynolds Pond	Berlin		*	**	*				**				
Schwartz Pond	Suffield	*	*	**	**				**	*			
2. Shaker Pond	Enfield	*	*		**				**	*			
Spencer Pond	Suffield			**	**				**				
Spring Pond	Berlin				*				*				
Stony Brook Pond	Suffield			**	*				*				
1. Terramuggus Lake	Marlboro	*	*	**	*				**	*	*		
Upper Basin Pond	Windsor Locks	**	**	**	**		*		**		**		
Vinton's Mill Pond	South Windsor		**		**				**				
White Oak Pond	Plainville		*		**				*	*			
Windsorville Pond	East Windsor	*			*				*				
<b>NEW HAVEN COUNTY</b>													
Beaver Pond	Meriden		*	**	*				*	*	*		
Black Pond	Meriden, Middlefield	*	*	**	*				**	**	*		

NEW HAVEN COUNTY (2)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
2. Branford Reservoir	Branford	*	*	*	*				*				
Cedar Pond	Branford, North Branford	*	*		*				*	*			
Community Lake	Wallingford		*	**	**				**		**		
Hanover Pond	Meriden		**		**				**		*		
Hitchcock Lake	Wolcott, Waterbury	**	**	**	**				**	*	*		
Housatonic Lake	Derby, Shelton	*	**	**	**				**	*	*		
Kerite Cable Co. Pond	Seymour		**		**				*	*			
Konolds Pond	Woodbridge		**		**				*	*			
Lakewood Pond	Waterbury	*	*		*				*	**	*		
2. Lindley's Pond	Woodbridge, Bethany		**	**	**				*				
Linsley Pond	Branford, North Branford	*	*	**	**				**	*	*		
2. Long Meadow Pond	Middlebury		*	**	**				**	*	*		
Mirror Lake	Meriden			**	**				**	**			
Moose Hill Pond	Oxford		*		*				**	*			
Mungers Ponds	Guilford		*		*				*		*		
2. North Farms Reservoir	Wallingford		*		*				*		*		
Paper Mill Pond	Seymour		**		**								

NEW HAVEN COUNTY (3)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Phipps Lake	West Haven				*				*	*	*		
2. Quassapaug Lake	Middlebury	*	*	**	**				**	**	**		
Quonnipaug Lake	Guilford	*	*	*	*				**	**	*		
Roses Pond	Milford		*	*	*				*	*	*		
2. Silver Lake	Meriden		**		*				*	*			
Simpson Pond	Wallingford		*	*	*				*	*			
Strong's Pond	Woodbridge, Bethany		*	*	*				*	*			
Tracey's Pond	Waterbury		*	*	*				*	*			
Tuxis Pond	Madison		*	*	*				*	*	*		
West Pond	Guilford	*	*	*	*				*	*	*		
2. Wilson's Pond	Southington	*	*	*	*	*			*	*	*		
Zoar Lake	Oxford, Newtown, Southbury		**	*	**	**	**		**	*	*	**	

NEW LONDON COUNTY

Amos Lake	Preston	**	*	*	*				*	*	*		
Ashland Pond	Griswold	*	*	*	*				*	*	*		
Aspinook Pond	Griswold, Lisbon, Canterbury	*	*	*	*				*	*	*		
Avery Pond	Preston		*	*	*				*	*	*		
Bailey's Pond	Voluntown			*	*				*	*	*		

NEW LONDON COUNTY (2)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Baltic Pond	Sprague			*	*				*				
Beach Pond	Voluntown	*	*	**	**				**	*	**		
Beachdale Pond	Voluntown	*	*	**	**				**	*	**		
Big Pond	Lebanon, Windham	*	*	**	**				**	**	*		
Billings Lake	North Stonington	*	*	**	**				**	*	**		
Black Hall Pond	Old Lyme		*	**	**				*				
Blissville Pond	Lisbon		*	**	**				*	*	*		
2. Bog Meadow Reservoir	Norwich			**	**				**	*			
Brewster Pond	Lebanon		*	**	**				*	*	*		
Carrol Reservoir	Griswold			**	**				**	**			
Chesbro Ice Pond	Stonington			**	**				**	**			
Clark's Falls Pond	North Stonington		*	**	**				**	*			
Clayville Pond	Griswold	*	*	**	**				*	*			
Conn. College Pond	Waterford			**	**				**	**	**		
Crystal Lake	Groton			**	**				**	*			
Darrow's Pond	East Lyme		*	**	**				*	*			
2. Day Pond	Colchester			**	**				**	*			**
Dodge Pond	East Lyme	**	*	**	**				**	*			
Donahue Pond	Sprague	**		**	**				**	*			

Name of Pond or Lake	Location	Black Bass	Pickarel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Fitchville Pond	Bozrah	*	*		*				*				
2. Gardner Lake	Salem, Montville, Bozrah	**	**	**	**			*	**		**		
Glasgo Pond	Griswold	**	*	**	**				*	**	**		
Grants Pond	Franklin		*	**	**				*				
2. Green Falls Reservoir	Voluntown	**	*	*	**				*		**		**
Greenville Pond	Norwich, Preston				*								
Groton Pond	East Lyme		*	**	**				*		*		
Hallville Reservoir	Preston				**				*	**	**		
Hinckley Pond	Lebanon				**				*				
2. Hodge Pond	Voluntown		*		*				*	*	*		**
Hopeville Pond	Griswold	**	*	**	**				*	*	**		
Horse Pond	Salem	*	*	**	**				*	**	**		
2. Joshuatown Ponds	Lyme				**				*		**		**
Lantern Hill Pond	Ledyard, North Stonington		*		**				*				
Locke Pond	Lebanon				**				*		*		
1. Long Pond	Ledyard, North Stonington	*	*	**	**				*	**	*		
2. Miller's Pond	Waterford	**	**	**	**		**		*	**	**		

NEW LONDON COUNTY (4)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
2. Mitchell Pond	Salem												**
Norwich Falls Pond	Norwich				*				*	*	*		
Occum Pond	Norwich, Sprague			*	**				*				
Oxolboxo Lake	Montville	*	*		**				**		**		
Palmer Pond	Lebanon	**	**	**	**				**		**		
Paper Mill Pond	Sprague	*	*	**	**				*	*	*		
2. Pataganset Lake	East Lyme	*	*	**	**			*	**	**	**		
Pickereel Lake	Colchester, East Haddam	**	**	**	**		**		**	**			
Poquonock Pond	Groton	*	*	**	*				*	*	*		
2. Powers Lake	East Lyme		*		*				*				
Ripley Park's Pond	North Stonington		*		**				*				
Rogers Lake	Lyme, Old Lyme	**	**	**	**				*	*	*		
Scholfield Pond	Montville	*	*		*				**	*	*		
Smith Grove	Waterford			**	**				*	*	*		
Spaulding Pond	North Stonington		*	**	*				**	*	*		
Spaulding Pond	Norwich			**	**				*	*	*		
State Hospital Pond	Preston			**	**				*	*	*		

NEW LONDON COUNTY (5)

Name of Pond or Lake	Location	Black Bass	Pickerei	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Tadma Pond	Bozrah		*		*				*		*		
Taftville Pond	Norwich, Lisbon				**								
Trading Cove Pond	Norwich, Montville				**				*				
Trails Pond	Groton			**	**				**	**	**		
Tunnel Pond	Lisbon, Preston	*	*		*				*	*	*		
Wheeler Pond	Montville				*				*				
Wilcox Pond	Norwich		*		*				*	*	**		
Williams Pond	Lebanon	**	**	**	**				**	**			
Wyassup Lake	North Stonington	*	*		*				*	*	*		
				**	**				**		**		
<b>FAIRFIELD COUNTY</b>													
Ball Pond	New Fairfield	*	*	*	*				*	*			
Beardsley Park Pond	Bridgeport			**	**				**		**		
Bishop's Mill Pond	Norwalk		*		**				**	*	*		
Buttonshop Pond	Newtown				**								
Candlewood Lake	Danbury, Sherman, Brookfield	*	*	*	*	*	*	*	*	*	*	*	*
	New Milford, New Fairfield	**	**	**	**	**	**	**	**	**	**		**
Chasmers Pond	Darien, Norwalk		*	*	*				*	*			
Coger's Pond	Newtown		*		*				*	*			
				**	**				**				

FAIRFIELD COUNTY (2)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Corner Pond	Danbury			**	*				**				
Curtiss Pond	Newtown		*	**	**				**	*			
Gilbert's Pond	Newtown			**	*				**				**
Gilbert and Bennetts Pond	Redding, Wilton		*		*				**				
Groups Reservoir	New Canaan		*	**	*				**	*			
Kenosha Lake	Danbury	*	*	**	**		*		**	*			
Lee's Pond	Westport		*		*		**		**	*			
Mamanassee Lake	Ridgefield	*	*	**	*		**		**	*			
Mianus Pond	Greenwich			**	*				**				
Morgan Pond	Newtown		*	**	*				**				
Moriarty's Pond	Wilton	*		**	**				**				**
Nash Ice Pond	Westport		*	**	*				**	*			
Ondex Pond	Monroe		**	**	*				**				
Peck Mill Pond	Stratford		*	**	*				**				
2. Samp Mortar Reservoir	Fairfield	*	*	**	*				**	*			
Seeley's Pond	Bridgeport	**	*	**	**		**		**	*			

FAIRFIELD COUNTY (3)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Shepard's Pond	Newtown		*		*				*	*			
South Norwalk Reservoir	Wilton	*	*	*	*				*	*		*	
Stillwater Pond	Stamford	*	*	*	*				*	*			
Taunton Pond	Newtown	*	*	*	*		*		*	*	*		
2. Trumbull Reservoir	Trumbull		*	*	*				*	*			*
Winnepaug Mill Pond	Norwalk	*	*		*				*	*			*

WINDHAM COUNTY

2. Alexander Lake	Killingly	*	*		*		*		*	*			
Bennett's Pond	Canterbury	**	**	**	**	**	**	**	**	**	**		
Big Pond	Windham, Lebanon	*	*	*	*				*	*	*		
Bigelow Pond	Hampton		*	*	*				*	*			
Black Pond	Woodstock	*	*	*	*				*	*	*		
Central Village Mill Pond	Plainfield			*	*				*	*	*		
Crystal Pond	Eastford, Woodstock	*	*	*	*				*	*	*		
2. Darling Pond	Chaplin			*	*				*	*	*		
Evans Pond	Plainfield			*	*				*	*	*		

WINDHAM COUNTY (2)

Name of Pond or Lake	Location	Black Bass	Pickerei	Calico-Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Fort Ned Pond	Canterbury		*		**				*	*	*		
Goodyear Pond	Killingly				**								
Hall's Pond	Eastford		**		**				*		*		
Hampton Reservoir	Hampton		**		**				**	**	**		
Kenyonville Pond	Woodstock				**				**				
Little Pond	Thompson			**	**				*				
Moosup Pond	Plainfield	*	*		*				*		*		
North Grosvenordale Pond	Thompson		**	**	**				**	**	**		
North Windham Pond	Chaplin	*	*		**				*				
Old Killingly Pond	Killingly	*	*		*				*	*			
Oneco Pond	Sterling	**	**	**	**				*	**	**		
Packer Pond	Plainfield		**	**	**				**	*			
Porter Pond	Sterling		*		*				*				
Prentise Pond	Putnam			**	**				**	**	**		
Quandick Reservoir	Thompson		*		**				*		*		
Roseland Lake	Woodstock	*	*		**				*	*			

WINDHAM COUNTY (3)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Schoolhouse Pond	Pomfret			**				*	**		**		
Sterling Mill Pond	Sterling			**	*			*	**		**		
Wappaquassett Pond	Woodstock		*	**	**			*	**		**		
Wrights Pond	Canterbury				**			*	**				

LITCHFIELD COUNTY

Bantam Lake	Litchfield, Morris	*	*	*	*			*	*	*	*		
2. Black Rock Pond	Watertown	**		**	**			*	**	**	**		**
2. Burr Reservoir	Torrington		*	*	*			*	*	*	*		**
2. Cream Hill Pond	Cornwall	*	*	**	**			*	*	*	*		**
Dog Pond	Goshen		*		**			*	**	**	**		**
2. Hart Pond	East Cornwall				**			*	**	**	**		**
Hatch Pond	Kent	*	*	**	**			*	*	*	*		**
Hatch Pond	Sharon			**	**			*	**	**	**		**
1. Highland Lake	Winchester	*	*	*	*			*	*	*	*		**
Judd Pond	Watertown	**	**	**	**			*	**	**	**		**
Leonard Pond	Kent	*	*	*	*			*	*	*	*		**
2. Mt. Tom Pond	Litchfield, Morris, Washington	*	*	*	*			*	*	*	*		**
		**		**	**			*	**	*	*		**

LITCHFIELD COUNTY (2)

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Mudge Pond	Sharon	*	*		*				**				
North Spectacle Lake	Kent	*	*	**	**				**	**	*		
Park Pond	Winchester	*	*	**	**				**		*		
Pond Hill Pond	Norfolk			**	**				*	*	*		
South Spectacle Lake	Kent	*	*	**	**				**	**	**		
2. Stillwater Pond	Torrington	**	*	**	**				**	**	**		
Toby Pond	Norfolk	**	*	**	**				*	*	*		
1. Twin Lakes	Salisbury	*	*	*	*				*	*	*		
Tyler Pond	Goshen	*	**	**	**				**	**	**		
Waramaug Lake	Warren, Washington, Kent	*	*	**	**				**	*	*		
Wattles Pond	Watertown		*	*	*				**	*	**		
West Hill Pond	New Hartford	*	*	**	**				**	**	**		
West Side Pond	Goshen		*	*	*				**	**	**		**
2. Winchester Lake	Winchester			*	*				**	**	**		
Wononpakook Lake	Salisbury	*	*	**	**				*	*	*		
Wononscopmuc Lake	Salisbury	*	*	**	**			**	**	**	**	**	**
2. Wood Creek Pond	Norfolk		*	**	**				**	**	**		

Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Basham Lake	East Haddam	*	*		*				*				
2. Beeseck Lake	Middlefield	*	*	*	**				**	**	**		
Black Pond	Middlefield, Meriden	**	*	*	*				**	*	**		
Bushnell Pond	Essex		*		*				*				
Cedar Lake	Chester	*	*		*				*	*			
2. Chatfield Hollow Pond	Killingworth			*	*				*	*			**
Crystal Lake	Middletown	*	*		*				*	*			
2. Deep Hollow Reservoir	Chester			*	*				*	*			
Dooley's Pond	Middletown	**	**	**	**				**	*	**		
Fricks Pond	Killingworth, Haddam		*		*				*	*			
Great Hill Pond	Portland	**	**	**	**			**	*	*	**		
Ivoringtons Pond	Essex		*		*				*				
Job's Pond	Portland	*		*	*				*	*			
Moodus Reservoir	East Haddam		*	*	*				*	*			
Permachie Pond	Middletown	**	*	*	*				**	*	*		
1. Poctopaug Lake	East Hampton	**	*	*	*				*	*	*		
Pratt Reed Reservoir	Saybrook	**	*	*	*				*	*	*		

MIDDLESEX COUNTY (2)

Name of Pond or Lake	Location	Black Bass	Pickeral	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
Rogers Pond	Saybrook		*		*				*				
2. Russell Jennings Pond	Chester		*		*				*				
2. Shaw Lake	East Haddam	**	*	**	*				**	**	**		
Wright's Pond	Westbrook, Essex		*		*				**	**	*		

TOLLAND COUNTY

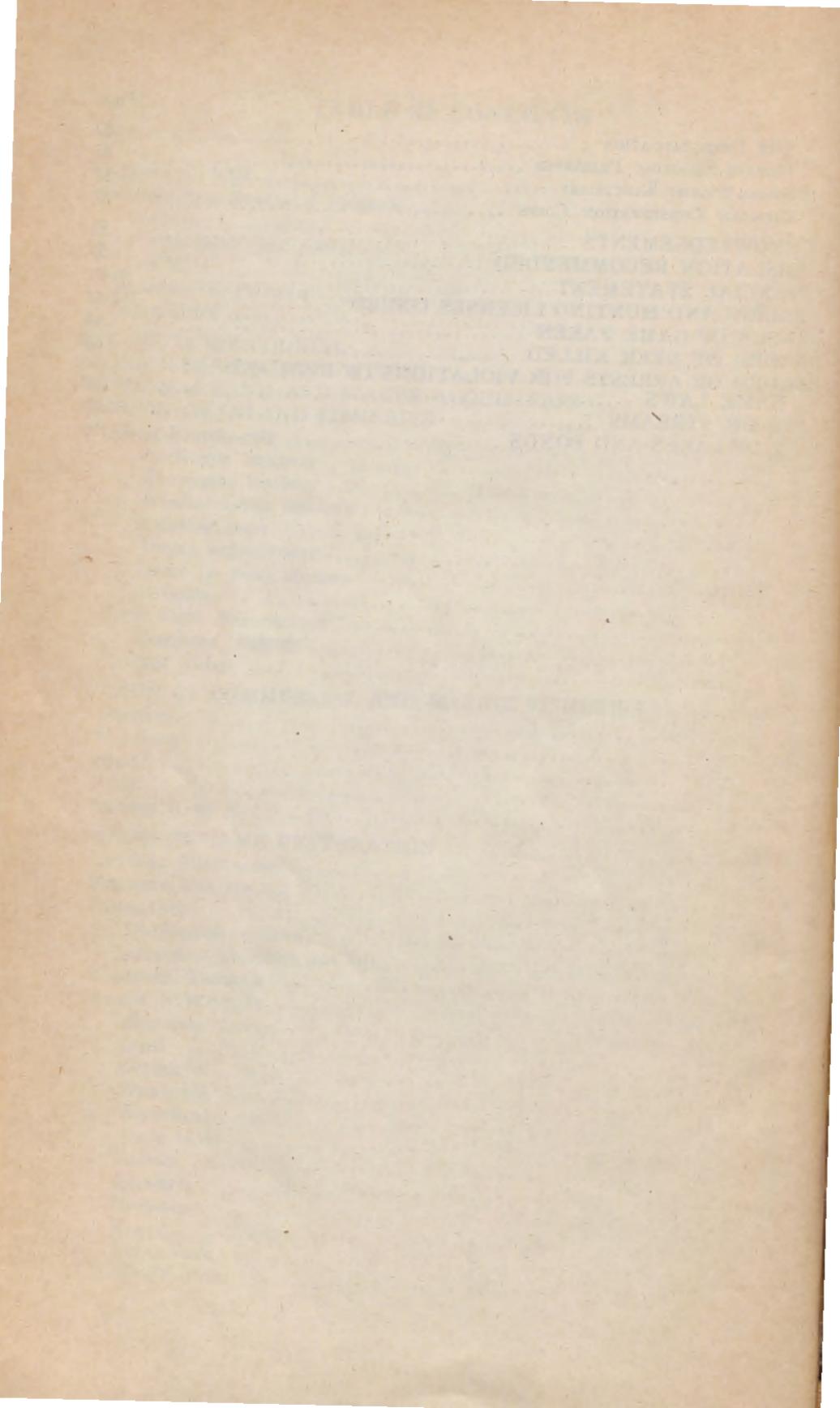
Bigelow Pond	Union		*		*				*				
Bolton Notch Pond	Bolton		*		*				*	*			
Bonair Lake	Ellington, Tolland			**	*				**	*	*		
Case's Pond	Andover		*		*				*	*			
2. Columbia Lake	Columbia	*	*	**	*				**	*	*		
Crystal Lake	Ellington, Stafford	**	*	**	*				**	*	*		
Eagleville Pond	Mansfield, Coventry	**	*	**	*				**	*	*		
Echo Lake	Mansfield	*	*		*				*	*	*		
Flood Pond	Somers, Enfield		*		*				*	*	*		
Forestville Pond	Stafford		*	**	*				*	*	*		
Mashapaug Lake	Union	*	*	**	*				**	*	*		

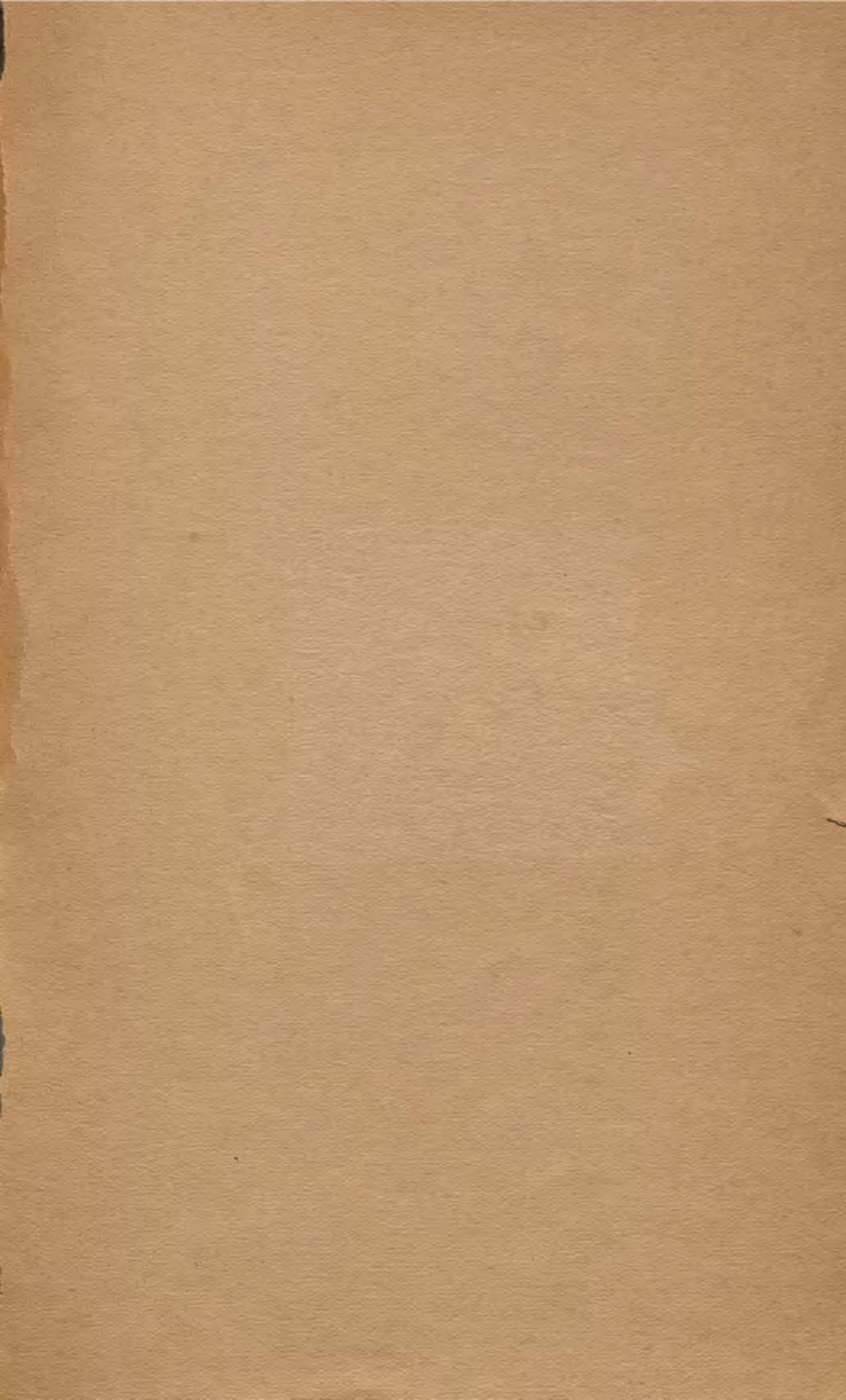
Name of Pond or Lake	Location	Black Bass	Pickereel	Calico Bass	Yellow Perch	Pike Perch	White Perch	Smelt	Bullheads	Sunfish	Shiners	Lake Trout	Rainbow Trout
New City Pond	Stafford		*	**	**				**	**	*		
Orcuttville Pond	Stafford		*	**	*				**	**	**		
Rhode Island Mill Ponds	Stafford		*	**	*				**	**	**		
Somersville Pond	Somers		*	**	*				**	*			
Stafford Reservoir	Stafford		*	**	*				*	**	*		
State Line Pond	Stafford	**	**	**	**				**	**	**		
Sturtevant's Pond	Stafford	*	*	**	**				**	*	*		
Talcottville Pond	Vernon			**	*				**				
Tankerhoosen Lake	Vernon		*		*				*	*			
Tolland Marsh Pond	Tolland		*		**				*				
Walker Reservoir, Lower	Vernon		*		*				*		*		
1. Wangumbaug Lake	Coventry	*	*	**	**				**	**	**		
1. Willimantic Reservoir	Bolton, Vernon, Coventry	**	**	**	**	**			**	**	**		
		**	*	**	**				**	*	**		
		**		**	**				**		**		

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State of Connecticut

**TWENTY-SECOND BIENNIAL REPORT**

OF THE

**STATE BOARD**

OF

**FISHERIES AND GAME**

FOR THE YEARS

**1936-38**

TO

**HIS EXCELLENCY, THE GOVERNOR  
AND THE GENERAL ASSEMBLY**





State of Connecticut

PUBLIC DOCUMENT No. 19

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HARTFORD

PUBLISHED BY THE STATE

PUBLICATION  
APPROVED BY  
COMMISSIONER OF FINANCE AND CONTROL

TO HIS EXCELLENCY, WILBUR L. CROSS

*Governor of Connecticut*

*Executive Chambers*

*Hartford, Connecticut*

SIR:

The Commissioners of the State Board of Fisheries and Game submit herewith the twenty-second report of the activities of this Department for the two years ending June 30th, 1938.

During the biennium the department has been reorganized to obtain greater efficiency in the administration of the program of conservation of wildlife. The warden service has been completely uniformed and equipped. An annual school has been instituted to give the wardens an opportunity to become familiar with the latest developments in the field of wildlife restoration. Plans have been completed for the organization of a division of game restoration with a technically trained chief and competent personnel.

The efforts of the Department have been more and more directed toward the problem of making the people of the state conscious of the need of restoring the natural conditions so that the wildlife crop will be produced naturally rather than depending on purely artificial methods of "put and take."

An attempt has been made to balance the program and take care of the many conservation interests in the state. Of particular value is a survey of the conditions of our lakes and ponds which was commenced during the biennium. The survey was conducted in recognition of the fact that an increasing number of people are interested in pond fishing.

A great deal of detail is omitted from this report and is on file at the office of the Board, accessible to any interested citizen. As the reorganization of the Department progresses, it is hoped that it may be possible to publish reports on many phases of the Department's activities.

Respectfully submitted,

OLIVER B. ELLSWORTH, *Chairman*

CHARLES F. GRIFFIN

JAMES G. HAMMOND

November 3, 1938

TO THE COMMISSIONERS,  
STATE BOARD OF FISHERIES AND GAME:

I have the honor to submit herewith a report on the activities of this department for the biennial period ending June 30, 1938.

Respectfully,

R. P. HUNTER, *Superintendent.*

Hartford, Conn., October 1, 1938.

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## INTRODUCTION

It becomes more important each biennium that the people of the state recognize that wildlife is a crop of the land and that the problems of conservation are the problems of wise, multiple land use. Since most of the practices of wildlife management tend to build up and maintain the natural resources on which the very life and future well-being of the people of the state depend, these practices become public concern. To meet this situation the State Board of Fisheries and Game must direct its attention and aim its program at the broader aspects of the problem rather than limit its functions to the production of a single year's hunting or fishing crop without regard to the future.

The effect of the vast public relief work programs, changing the biota of large areas almost overnight, demand close scrutiny and a clear understanding of the long-range effect of such radical changes.

The effect of the additional recreational load, especially the larger take in hunting and fishing arising from the increased leisure time of the industrial people of the state, has placed a three-fold duty upon the department. First, to assist the people of the state to perceive and understand the problems of proper land use and the biological principles involved in producing a wildlife crop. Second, to awaken public opinion to the need of preserving as much of the natural habitat as is consistent with the State's high standard of urbanized living. Third, to direct every effort of the department to provide adequate seed stock and techniques designed to increase the production of every available area.

Since living things are subject to wide fluctuations of abundance and since there are many factors not yet subject to control, it is imperative that the department and the sportsmen be able to meet on a common ground of understanding in order to find the solution. The newly organized State League of Sportsmen's Clubs seems to offer a practical means of affecting this understanding. Patience and tolerance both on the part of the public and on the part of the department are required.

The Board wishes to reiterate the statement made in its Twenty-first Biennial Report that it has the same objective as all the sportsmen, that is, "to maintain a properly balanced supply of all species of wildlife which are adapted to our environment at a level which will furnish normally an annual surplus crop which can be harvested without affecting the future supply."

## Finances

During the biennium the State Board of Fisheries and Game agreed with the Budget Director to base its budget on the amount of anticipated receipts arrived at from the previous year's experience. This plan would build up a substantial working or bank balance in the funds from license fees. This working balance is necessary because the fish to be planted in the streams must be produced in advance of the time when license fees are received, and the requirements of stocking also necessitate the purchase of game in advance of the receipt of hunting license fees.

In the two preceding bienniums funds from these working balances had been expended in lieu of appropriations usually granted by the General Assembly. This change in fiscal policy required certain reductions in the services rendered during the biennium. The Board believes, however, that it is a sound policy and is building up the working reserves necessary to carry on the business of the department.

In the past the General Assembly has been asked to contribute, through appropriations from the General Funds, to the support of those activities of the department which are of benefit to the people of the state at large in addition to the expenditures of license fees for the production of the yearly crop of fish and game. This program is sound and the Board believes that it should be continued.

## Legislation

The discretionary power law passed at the last session of the legislature expires on June 30, 1939. This law permits the Board to give additional hunting and fishing to the public when conditions are favorable. The Board believes that a reenactment of the law as now written will be beneficial to the sportsmen and that it can also be a valuable conservation measure if restrictive provisions are added in order to close seasons when any protected species is endangered by adverse natural conditions.

The statutes concerning the warden force if revised, would make for more efficient operation of the field service. A careful discussion of this is included in the report of the Chief Warden. The major provisions requested in this legislation would permit the division of the state into districts to equalize the problems of patrol and law enforcement.

Considerable difficulty has been experienced in the problem of regulated lakes and ponds. The laws, as now written, require that women have fishing licenses on all lakes, ponds and streams leased to the state. It would seem that the legislature should decide whether women should be required to have licenses to fish on such waters as receive special attention from the department or whether women anglers should be required to have licenses on all waters. The additional revenues involved in such a move would be comparatively small

but the clarification of the situation would make for better understanding and more equitable law enforcement.

Several items of marine legislation should be brought to the attention of the General Assembly. The principal one of these is a limit on the length of striped bass to be taken in Connecticut waters. States along the Atlantic seaboard have already legislated or contemplate legislation in this connection. A limit of sixteen inches is suggested as most favorable from the conservation standpoint.

## THE ADVISORY COUNCIL

Many changes have been made in the personnel of the Advisory Council. New by-laws have been adopted which provide a change over of membership, no member remaining more than four years.

The Council is very helpful to the Board by meeting with it monthly and advising it on matters of policy. It is an entirely voluntary and unofficial body serving only in an advisory capacity at the request of the Board. The members serve without compensation and travel at their own expense to meetings.

The Board takes this opportunity to express its appreciation of the valuable services made by the Council members who give freely of their time and their helpful advice and support.

### Members of the Advisory Council

A. L. Weatherhead, President	Willimantic
J. Frederick Scholes, Vice-President	Essex
Ray E. Benson	New Haven
L. M. Dillon	Rockville
Wilfred H. Dresser	Hartford
Samuel L. Ferguson, Jr.	Waterford
Erick T. Koehler	Seymour
John P. Leonard	Avon
Raymond I. Longley	Storrs
James H. L. Ott	Chester
Henry Rocano	Danbury
Charles B. H. Vaill	Winsted
W. Lee White	Westport
George Whitney	No. Grosvenordale
Julian L. Williams	Norwich

## DIVISION OF ADMINISTRATION

MILDRED K. BARTLE, *Chief*

Major changes in the Division of Administration for the biennium are the addition of an Assistant Superintendent, Elliott P. Bronson, on October 1, 1936, and the resignation of Arthur L. Clark as Superintendent on March 17, 1938, after six years of service in this position. The Assistant Superintendent served as Acting Superintendent until September 15, 1938, when Dr. Russell P. Hunter assumed the duties of the office.

In addition to the Superintendent and the Assistant Superintendent, the Chief of the Division proper is the Executive Secretary who is assisted by eight clerks whose duties include the keeping of all financial records, the issuance of certain licenses and the handling of all correspondence and clerical work. The reorganization of the financial and accounting set-up of the state has standardized the work of this division with other state departments.

## DIVISION OF LAND AND WATER ACQUISITION

ELLIOTT P. BRONSON, *Acting Chief*

During the biennium the department purchased Peat Works Pond or Silver Lake in the Towns of Berlin and Meriden. This body of water is very popular for pond fishing and is used extensively by the sportsmen from the middle of the state. Being completely under state control, the fishing is regulated in order to obtain the maximum crop without continual restocking.

Along the Fenton River 21½ acres were purchased to give the department an opportunity to do some work in stream improvement and two additional acres were purchased in order to facilitate the passage of the fishermen down the stream. One section of the Fenton River was leased without cost, the consideration being that only fly fishing would be permitted on that section.

Leases which expired on the 150 miles of State-leased trout streams were renewed with some extensions on sections of the streams which were not previously leased.

Nearly all expiring leases on the State-leased shooting grounds in the state were also renewed. The State now has 31,397 acres under this plan at ten cents an acre.

The cooperative regulated shooting grounds plan was increased to 130,000 acres. Seventeen special patrolmen covered the areas during the hunting season. The cost of maintaining these areas was slightly less than three cents per acre. Of the 70,000 acres of State Forest land acquired through the Commission on Forests and Wildlife and the State Forester, 63,752 are open to public hunting. From the Federal Government 10,400.27 acres of land was leased through the Farm Security Administration for ninety-nine years at one dollar a year.

On this land several areas are allocated to the particular use of the State Board of Fisheries and Game. In the town of Hebron, Holbrook Pond of about 80 acres is available and has been closed to fishing pending the time the game fish in the pond increase to a point where they produce a natural crop. In the town of North Stonington, Asseconk Swamp of about 635 acres is being developed as a large migratory waterfowl breeding area. Certain sections in the town of Griswold have been extensively developed by game management and a small nursery maintained by the Resettlement Administration provided a quantity of berry-bearing shrubs which were planted over the area.

The total area of State owned or controlled land open to public shooting is 235,549 acres. On the basis of 27,000 hunting licenses, this makes an average of 8.06 acres per licensed hunter.

This program offers some solution to the matter of posted lands and some degree of protection to rural property owners. It should be reinforced, however, by legislation controlling the promiscuous leasing and closing of lands by game clubs which do not try to improve conditions or to increase the wildlife resources of the state.

The program is a portion of the plan conceived in 1925 which contemplated the acquisition of 200,000 acres of state forests open to hunting and fishing, the leasing of all major trout streams in the state and the acquisition of rights of way to all the major fishing lakes.

The department received a gift of a thirty-acre sanctuary in the town of Watertown through the generosity of Mrs. Ellen Hyde Scovill which is known as the Scovill Wild Life Sanctuary. This sanctuary is located advantageously within the center of the Watertown Regulated Shooting Area and can be made very productive in the conservation and restoration of wildlife on the area. It also serves as a demonstration of the program of the department for the restoration of natural conditions.

## DIVISION OF FISH RESTORATION

FRANK N. BANNING, *Chief*

No changes were made in the major policies of the Division of Fish Restoration during the biennium. Although of necessity most of the work of the department was in producing fish for the artificial restocking of the waters of the state, the emphasis and aim of the department was directed towards the restoration of conditions in the lakes and streams suitable for the production of a fish crop by natural means. Even the technique used in artificial restocking was designed to produce fishing in as near natural conditions as was possible in a highly urbanized state.

### Trout Restoration

The hatcheries and rearing stations of the state were operated at capacity with only normal losses occurring. New supplies of water were tapped, new pools were constructed and old pools enlarged. New

methods of rearing were employed which increased the production limits of the hatcheries to the extent of available funds for fish production.

### **Burlington Hatchery**

A description of the corrective work at this hatchery during the past biennium is given in the Twenty-first Biennial Report. Further correcting the difficulties encountered since 1936, new wells have been driven permitting the use of spring water entirely in the hatchery building and rearing pools. The waters of Punch Brook are still available but do not have to be depended upon for use in the hatchery.

The water supply of the rearing pools on Punch Brook has been protected so that the oiling of the highway by the town of Burlington no longer endangers the trout. This was accomplished by conducting the supply through a conduit beneath the highway that crosses the stream and by-passing the drainage from the highway around the rearing pools.

Several fry-rearing raceways made of wood and in service many years have been removed, and five circular rearing pools have been constructed on the same site.

These changes, especially the use of more spring water, have reduced the losses from disease at this hatchery below those normally expected.

### **Windsor Locks Hatchery**

Conditions at this station remain the same as previously reported in the Twenty-first Biennial Report. Although trout can still be successfully hatched, the rearing capacity of the hatchery is limited by large quantities of silt from adjoining tobacco lands which clog the supply stream. However, the production is still sufficient to justify the operation of the hatchery until a more suitable site can be secured and funds are available to construct a more efficient rearing station.

### **Kensington Hatchery**

This station is very successful in rearing trout. It serves to relieve the congestion of the other two hatcheries. Improvements during the biennium consist of a new rearing pool built by the Civilian Conservation Corps. This pool is well-constructed and very satisfactory. In addition, two circular fry-rearing pools were built by the employees of this department. Through these additions, all the water supply now available is being utilized.

### **Pachaug Forest**

Commencing in a small way in 1929, the rearing of trout at this station has been steadily progressing. An experimental rearing station of the raceway type was established in the upper limits of the Forest on Chapman Brook in 1936. This was by way of a test of the water supply and proved very satisfactory.

Based on the results of this pool, a project was approved by the Civilian Conservation Corps to build a rearing pool on the stream 100 feet by 40 feet. This pool was completed in the early fall of 1938 and was stocked with 15,000 fingerling trout for distribution in the spring of 1939. If this pool is successful, it is expected that a number of other pools may be constructed on this same stream. This will result in economy since it is easier to bring small fish across the state from the Burlington Hatchery and raise them to adult size, distributing them in the streams in the Eastern section of the State, than it is to carry adult fish across the state.

The table of the trout plantings in 1937 and 1938 to October 1, 1938, follows:

#### TROUT PLANTINGS

	Fingerlings	1 Year Adults			2 Year Adults			Total Weight
		Brook Trout	Brown Trout	Rainbow Trout	Brook Trout	Brown Trout	Rainbow Trout	
1937	374,804	106,300	1,000	5,725	11,177	26,884	24,613	63,186 lbs.
1938	187,244	79,892	37,476	3,374	4,137	32,283	21,456	35,843 lbs.

#### The Trout Fishing Season

Since every program should be evaluated in terms of its results, the analysis of the fishing seasons of 1937 and 1938 is included. Compared with the very disastrous season of 1936 described in the Twenty-first Biennial Report, the seasons of 1937 and 1938 were very much more successful. Although anglers are not required to report the number of fish taken, as in the case of hunters who report their kill of game, some indication of the results per angler can be arrived at by the check lists of the wardens and patrolmen on the various streams.

The opening day of the season is always of interest to the anglers, and a comparison of the results of the last three years is as follows: in 1936, 3,264 fishermen caught 4,258 trout, which is 1.03 trout per rod; in 1937, 4,435 fishermen caught 8,327 trout, which was 1.88 per rod; in 1938, 5,139 fishermen caught 6,490 trout, which was 1.26 per rod. Since the number of wardens and patrolmen checking the fishermen on the opening day each year is comparable, the results would indicate that fishing interest is increasing.

In the season of 1937 water and weather conditions were favorable but there was not much natural food in the streams. Fish were taken early in the season in large numbers and on the whole the season was comparable to the seasons of 1934 and 1935.

In the season of 1938 water and weather conditions approached the ideal. Streams were teeming with food. Some of the largest hatches of flies observed in recent years were reported from the larger rivers. These rivers did not warm up rapidly, however, and fishing was very "spotty" until the latter part of the season.

The trout season in 1937 was extended on some of the larger streams until October 31st but because of the water conditions, was closed on September 1st in 1938.

### Pollution

The State Water Commission is continuing its splendid work in cleaning up the waterways of the state. It has prevented new pollution from contaminating the streams and is working with the various municipalities and concerns in finding ways and means of removing the present pollution. An increasing interest in this important phase of conservation is being demonstrated by the sportsmen's organizations.

### Pond Fish

Supplementing pond fish rearing at Burlington and Kensington hatcheries are rearing ponds at Chaplin and Norwich. Darling Pond in Chaplin was stocked experimentally in the fall of 1937 with large size pickerel for breeding. Whether or not the experiment is successful will not be known until the fall of 1938 when the pond will be drawn off and the young pickerel removed. Bog Meadow Reservoir in Norwich provides many calico bass, yellow perch, bullheads and shiners. This pond is under management in an agreement with the City of Norwich and the Norwich Fish and Game Club.

A further source of supply of pond fishes for stocking purposes is the Connecticut River. Commercial fishermen who net suckers and carp under permits from this department hold the game fish they take in their nets for this department which purchases them for a nominal sum and uses them in restocking. It is expected that more fish will be available from this source in the fall of 1938. Most of the pond fish restocking program is carried on in the fall so that it is impossible at this time to get complete figures on the distribution of pond fish in 1938 in this biennial report.

In the year 1937 through the cooperation of the United States Bureau of Fisheries 179,000 smallmouth black bass fry were taken from a closed reservoir and planted in the bass ponds of the state. In the year 1938 this number was increased to 416,000. No method of checking the results of this type of planting has yet been found. Doubtless there is a large mortality in these smallmouth bass but fishermen claim that there is improved fishing in the lakes that have been so planted over a number of years. Supplementing this program, it is planned to take a number of large bass from several closed reservoirs in the fall of 1938.

Pond fish distribution statistics for the year 1937 and a partial list of the distribution for the year 1938 up to October 1st is given below. As the bulk of the fish obtained for restocking is received in the late fall, the totals will be measurably increased.

	1937	1938
Smallmouth Black Bass Fry .....	179,000	416,000
Yellow Perch Fry .....	20,150,000	
Pickereel—Adults .....	1,007	1
Pickereel—Fingerlings .....	7	
Yellow Perch—Adults .....	13,195	5,586
Yellow Perch—Fingerlings .....	117,612	300
White Perch—Adults .....	273	52
Largemouth Black Bass—Adults .....	32	54
Rock Bass—Adults .....	4	
Calico Bass—Adults .....	3,019	897
Calico Bass—Fingerlings .....	147,586	
Bullheads—Adults .....	26,196	8,615
Bullheads—Fingerlings .....	333,618	3,394
Shiners—Adults .....	80,770	600
Shiners—Fingerlings .....	86,500	
Roach—Adults .....	1,923	90
Roach—Fingerlings .....	8,465	

### Pond Survey

A careful analysis of the license figures would indicate that the increased number of fishing licenses sold is probably due to increased interest in pond fishing.

It has been felt for a number of years that the pond fish restoration program has failed to give results commensurate with the amount of stocking which has been done. It was further apparent that the relatively new phase of the work, that is, the introduction of rainbow trout into impounded waters, was giving poor returns in several lakes. The obviously sound procedure was to begin an investigation to determine, if possible, the reasons for the discrepancies between effort and results and to suggest more efficient methods.

During the summer of 1937 temporary appointment of an aquatic biologist was made for a period of two months. This technician inspected and reported on a number of the more important ponds and lakes of the state. This preliminary step was considered primarily as a reconnaissance survey and its value lay in giving the department a clearer picture of the problems involved and the procedures necessary to their solution.

On June 15, 1938, a pond and lake survey crew of three men was placed in the field on an estimated budget of \$1,100 over and above the normal operating expenses of the department. This figure was almost entirely for personnel, since the scientific equipment used was borrowed from the Connecticut State College, Yale University and the United States Bureau of Fisheries.

Up to and including September 22, 1938, a total of \$876.09 had been expended on this work. For this expenditure twenty-nine lakes and ponds having a total area of 12,940 acres were covered, making a unit cost of slightly over six cents per acre.

Extensive chemical and physical data has been gathered on waters covered, amount of bottom food organisms per acre, and the presence and relative abundance of forage minnows determined. Spawning areas used by game fishes have been located on field maps and growth studies of the principal game fishes made. Food habits and the presence and abundance of parasites have been studied. This and other essential information has been the basis for recommendations as to future stocking and management of these waters.

It is planned to continue the survey work on ponds and lakes for at least two more years. Further chemical data will be gathered during the winters of 1938-1939 and 1939-1940 on the principal lakes and ponds because it is essential to know winter conditions as well as summer conditions in order to manage such waters intelligently.

As the pond survey provides the knowledge of the actual conditions of the various lakes and ponds, it is the aim of the department to put into operation the proper management measures on each pond and, by an accurate check of results, to make such adjustments in this management program as are necessary.

## DIVISION OF COMMERCIAL AND MARINE FISHERIES

FRANK N. BANNING, *Chief*

### Lobsters

Production of fourth stage lobsters at the rearing station at Noank dropped to 253,000 in 1937 due to a smaller catch of egg-bearing females and marketable lobsters. In 1938 production increased to 510,000 fourth stage lobsters, an increase of one thousand over the 1936 season which was 509,000. The department's present rearing facilities in any normal season have been able to produce approximately half a million lobsters.

On September 21, 1938, the lobster hatchery was entirely destroyed in the gale and tidal wave which lashed the Connecticut coast. The department is entering on immediate plans for the rebuilding of this hatchery. Changes in equipment will be made based on the experience of the past nine years of operation. The capacity will doubtless be increased by these changes.

### Flatfish or Flounders

In 1937, flatfish fry to the number of 266,300,324 were produced and liberated from the Noank hatchery. In 1938, the production was 75,000,000. The results reflect the low prices paid for flounders and the fact that many of the commercial fishermen have not been operating in recent years. An investigation by the United States Bureau of Fisheries is being carried on as to the results of the hatchery operations and the possibilities of increasing its activity in this field of commercial fishing. The results of this survey will be very helpful to the department in administering this branch of the work.

## Smelt

The propagation of smelt during 1937-1938 has been continued at Westport, the only place at the present time where brood fish can be secured.

The release of fry from this station in 1937 was 11,500,000 and in 1938 it was 18,900,000, a substantial increase over the previous season. The catch of smelt by the commercial fishermen at Westport increased proportionately.

## Shad

The run of shad in the Connecticut River in 1938 appeared to be larger and of longer duration than the previous season of 1937. Catches were good, but prices very low.

The hatchery at Leesville produced eight million fry in 1937 and approximately ten million in 1938. Apparently more shad entered the Salmon River in 1938, possibly due to the fact that the Connecticut River and its tributaries are getting back to the conditions that existed previous to the flood of 1936.

The hatchery at Leesville was entirely swept away when the Leesville dam broke on September 21, 1938, during a heavy flood. It is probable that it will be necessary to rebuild this hatchery in another location in order to have the proper head of water without the use of pumps for hatching shad fry.

## Striped Bass

The investigation of striped bass which was commenced by the State Board of Fisheries and Game, carried on for a time by the American Wildlife Institute and finally supported by the United States Bureau of Fisheries was completed on June 30, 1938. Striped bass have been abundant in the Connecticut waters in 1937 and 1938. The fish have been increasing in size and sportsmen have obtained large catches.

## DIVISION OF GAME RESTORATION

ARTHUR L. CLARK, *Acting Chief* to March 17, 1938

ELLIOTT P. BRONSON, *Acting Chief*

Thus far the Division of Game Restoration has not been as completely organized as the other divisions in the department. The practice of game management, other than legislation restricting seasons and bag limits and artificial stocking of birds and quadrupeds, has been slow of adoption in this state. The division has operated during the biennium with a minimum of personnel; the Superintendent, acting as the Chief of the Division, has given such time as he could spare from his administrative duties to its problems. He was assisted by employees of the state sanctuaries and one temporary employee known as the Director of Waterfowl Program who was particularly concerned with the problems of damage to wildlife resources on the marsh areas incidental to the control of mosquitoes. Much of the work of the division

was done by the warden service which assisted in the distribution of game, the making of surveys of game conditions, winter feeding and predator control.

At the close of the biennium, plans were approved by the Board for the appointment of a Chief of the Division and a clerk to assist in the work of tabulating the factual data obtained from the field in order that accurate interpretations might be made. The Chief of the Division will be charged with the furthering of the game management program, the supervision of the game breeders of the state, the purchase of pheasants, the liberation program and assistance to the various groups in the state which wish to practice game management.

### **The 1937 Hunting Season**

The report of the previous biennium covers the hunting season of 1936. A careful analysis of the very poor hunting conditions of that year may be found in that report.

Although the department does not receive the reports of the game taken by the hunters in a season until they take out their next year's license, it is evident that the annual game crop in 1937 was much better than the crop in 1936. The take of grouse was very spotty, with islands of abundance in a fairly general scarcity. Many young birds were seen in the early fall which evidently did not live through until the hunting season. On the whole the take was not large, which was probably fortunate as a larger breeding stock was left in the wild to provide for the upswing of the grouse cycle. The year 1937 was the third year of the decline and should be followed by a steady increase for a number of years.

### **Woodcock**

There seemed to be very little fluctuation in the population of native woodcock in 1937. The flight of woodcock into Connecticut was unusually heavy and some very good shooting was experienced along the shore.

### **Quail**

In 1937 the Legislature closed the season on quail until June 30, 1939. However, the department continued to purchase and release quail from the State supervised breeders who had seal-banded quail. In 1937 there were 872 quail liberated and in the spring of 1938 there were 1,031 quail liberated in the state.

### **Gray Squirrels**

Squirrels were relatively abundant in 1937, having reached a new peak since the migration of 1935.

### **Rabbits**

Rabbits are beginning to be more plentiful, having recovered from the low period of their cycle, and it is expected that 1938 will approach the peak of their abundance in Connecticut.

## Pheasants

Reports received indicate that the pheasant shooting season of 1937 returned about the expected results from the amount of liberation and propagation in the wild. In the fall of 1937, the department liberated 5,487 pheasants, of which 3,925 were cocks. These pheasants were distributed approximately equally by counties.

The stocking program which will affect the shooting season of 1938 is as follows:

6,371 pheasants liberated in the spring

6,586 pheasants liberated in the fall

Since there has been considerable controversy over the type of pheasants released for restocking purposes, the methods of releasing and time of release, a number of pheasants were banded in an effort to determine the drift of the birds under various restocking methods. Five areas were selected for this purpose, the Tolland shooting area, the Lebanon shooting area, the town of Griswold, and the Enfield and East Windsor regulated shooting areas. Hunters are requested, through the pamphlet giving regulations on public shooting grounds, to return the bands to the department with a description of the location where the banded birds were taken. It is hoped to obtain some indication of the results of natural reproduction of birds released in various types of cover at various dates in the spring liberation.

The department has been cooperating with various sporting groups in a 50/50 plan for the purchase of pheasants for a number of years. Some of these purchases are made in connection with field trials, others with distribution in the club's local community. In 1937 the following groups cooperated in this program:

- Associated Field Trial Clubs of Connecticut
- Enfield Hunter's Club
- Fairfield County Fish and Game Protective Association
- Georgetown Gun and Field Trial Club
- Irish Setter Field Trial Club of America
- Mohican Rod and Gun Club
- Naugatuck Fish and Game Protective Association
- New Britain Field Trial Club
- New Canaan Fish and Game Association
- New England Championship Field Trial Club
- Northwestern Connecticut Sportsmen's Association
- Ridgefield Fish and Game Association
- Rockville Fish and Game Club
- Seymour Rod and Gun Club
- Wallingford Field Trial Club
- Wallingford Rod and Gun Club
- Watertown Fish and Game Protective Association
- Western Connecticut Fish and Game Protective Association

In 1938 it was found necessary to draw certain rigid regulations in order to proceed under the reorganized State government plan. The first step necessary was to limit the date when clubs could agree to cooperate with the department so that the department could tell in ad-

vance of making up its budget how many birds would be required for the plan.

Orders for pheasants under this plan include a number of hens in addition to the number of cocks, all hen birds being liberated in the spring with a sufficient number of cocks to establish a ratio of one cock to three hens in the covers. An exception was made in the case of field trials in which hens were liberated in the fall. All birds are liberated on land which is open to public hunting or on land under State control as a sanctuary in which there is a natural drift of pheasants to open hunting territory. All of the liberations of these birds are supervised by the warden service.

A revision of this plan provided that the State would cooperate with various fish and game clubs by distributing pheasants in addition to regular State allotments as credit for certain wildlife management practices to be undertaken by the clubs. The objective of this plan was to increase the holding capacity of pheasant covers by the planting of food strips (grain).

The State Board of Fisheries and Game agrees to furnish eight pheasants in the spring in the ratio of one cock to three hens for each one-quarter acre food plot in a half-acre enclosure established by the club. The club obtains the land by lease or agreement on a two-year basis from the farmer. Plots of not less than one-half acre nor more than one acre in extent are accepted. If in pasture land, the club assumes the responsibility for fencing, and in all cases for plowing, harrowing and planting the land. The seeds are supplied by the department. The location is chosen in relation to its contribution to the surrounding cover and must be subject to the approval of the State Board of Fisheries and Game, the major requirements being that the tracts are surrounded by open hunting territory.

Under the first plan pheasants were liberated in cooperation with nineteen clubs, as follows:

- Allied Sportsmen's Clubs of Torrington
- Associated Field Trial Clubs of Connecticut
- Connecticut Sportsmen's Association, East Hartford Division
- Fairfield County Fish and Game Protective Association
- Irish Setter Field Trial Club of America
- Mohican Rod and Gun Club
- Naugatuck Fish and Game Protective Association
- New Britain Field Trial Club
- New Canaan Fish and Game Association
- New England Championship Field Trial Club
- Northwestern Connecticut Sportmen's Association
- Norwalk Fish and Game Protective Association  
and Norwalk Rod and Gun Club
- Ridgefield Fish and Game Association
- Seymour Rod and Gun Club
- Suffield Sportmen's Association
- Wallingford Rod and Gun Club
- Waterbury Fish and Game Protective Association
- Watertown Fish and Game Protective Association

Under the second plan of cooperation, the Windham Fish and Game Club and the Simsbury Fish and Game Club cooperated and five food patches were established.

### Pheasant Rearing Plan

Another cooperative plan, involving the rearing of pheasants, which was started by this department in 1933, has been successful both in the production and liberation of a large number of pheasants eight to twelve weeks of age at a relatively low cost and in the stimulation of an active interest and cooperation among farmers and sportsmen in the problem of game restoration. In the year 1936 under this plan 1,419 pheasants were raised and liberated and in the year 1937, the total was 1,641 pheasants.

Each year between the dates of May 10th and 20th the department has purchased approximately 10,000 pheasant eggs from local game breeders. These eggs have been distributed by the warden service in lots of one or two settings to those interested persons who have made application and agreed to the following regulations:

1. To follow instructions for hatching eggs and rearing the young.
2. To have hatching boxes and setting hens ready to receive the eggs between May 10th and 20th.
3. Before October 10th to liberate all birds raised on land which is not posted against shooting.
4. Before November 1st to report to the department the number of birds hatched, reared and liberated.

Every cooperative breeder is furnished with a mimeographed circular giving complete simple instructions for the care of the eggs and birds. Copies of this circular and applications for eggs may be had upon request.

The following is a summary report of the results obtained under this plan for the years 1936 and 1937:

	1936	1937
Total number of eggs distributed .....	11,572	10,169
Total cost of eggs purchased .....	\$1,403.01	\$1,005.50
Number of cooperative breeders receiving eggs .....	340	277
Number replying to questionnaire re hatching .....	139	216
Percentage reporting .....	40.9%	78%
Number of birds reported hatched .....	2,137	2,962
Number of birds reported liberated .....	1,419	1,641
Cost of birds liberated based on total cost of eggs .....	98¢	61¢

## Waterfowl

The thirty-day limit on waterfowl shooting was reflected in the amount of waterfowl taken in 1937. Black ducks make up a large percentage of all the kills reported. The flight of mallards, pintails, widgeons and lesser scaup reached its peak about October 15th. The second largest flight of greater scaup arrived around November 1st to 10th and the third flight of northern black ducks and golden eyes arrived about November 24th to December 5th.

A duck census was made by the department on December 30, 1937, which revealed a state-wide increase of 65% in black ducks, 30% in mallards, 30% in widgeons, 25% in teal, 25% in wood ducks, 25% in scaup, 50% in buffleheads and 75% in pintails. This check by the wardens was made by examining the various ponds and coastal waters of the state and was supplemented by an airplane survey through the courtesy of the State Aeronautic Department cooperating with the United States Bureau of Biological Survey which surveyed the coast line with a naval blimp.

The activities of the department to increase waterfowl consist of the establishment of small sanctuaries in which ducks may breed unmolested and the release of a breeding stock of ducks on these areas. In 1937, seventy-eight banded mallard ducks were liberated on the inland waters of the state. Some duck foods were planted to supplement the natural feeding in these areas.

*Mosquito Control.* Cooperating with the United States Bureau of Biological Survey, inspections have been made of areas to be ditched for mosquito drainage by the Works Progress Administration under the direction of the Connecticut Agricultural Experiment Station. Because of the fact that nearly all of the Atlantic coastline is being affected by the drainage of coastal marshes in an attempt to control mosquitoes, the damage to wildlife habitat has become of serious concern. Many conferences have been held with the Agricultural Experiment Station, the Works Progress Administration and the United States Bureau of Biological Survey in order to preserve as much of the wild life habitat as possible.

The possibilities of controlling mosquitoes by biological methods are being investigated. A project for the restoration of waterfowl habitat on Great Island has been set up by the State Board of Fisheries and Game, the Connecticut Agricultural Experiment Station and the Town of Old Lyme and submitted to the Works Progress Administration for execution. The objective of this project, as stated in the project agreement, is to determine if conditions attractive to and suitable for waterfowl can be provided on Great Island and at the same time make possible the control of the mosquito nuisance without adding unduly to the cost of the latter. The plan contemplates the creation of shallow, brackish ponds which will be flushed by tidal action, giving an opportunity for small fish to live in the ponds and help control any mosquito larvae which might hatch.

Adjustments in the procedure of draining the swamps are being sought. Wherever permanent structures have been created to act as tide gates, provision has been made for weir slots in which weir boards could be placed to maintain the water level on the drained areas at any height desired at a future time.

### Balances of Nature

In order that sanctuaries under the control of the State and the State-controlled properties not open to public trapping might not become overbalanced with predatory species, the Department has authorized trappers on the various areas to take predators under certain conditions. In 1937-1938, the department issued seventy-seven permits of this type. A tabulation of the results is as follows:

Hawks (Accipters) .....	139
Owls .....	71
Starlings .....	166
Crows .....	660
Red Squirrels .....	161
House Cats .....	136
Bobcats .....	6
Weasels .....	182
Foxes .....	390

The department attempts to regulate this practice very carefully in order that there may not be an unnecessary destruction of any particular species resulting in further damage from some other species.

### Private Shooting Preserves

The private shooting preserve plan has been continued during the biennium, permitting individuals and groups to shoot with extended seasons and bag limits under supervision and regulation of this department. The regulations are substantially the same as those established in 1934. The preserves continue to demonstrate the fact that the drift of pheasants from the areas is beneficial to the general shooting public.

Year	No. of Preserves	Total Acreage	No. of Pheasants Liberated	No. of Pheasants Killed
1936	14	7,796	7,576	2,820
1937	17	9,986	8,034	3,433

### Cooperative Research Program

The Cooperative Research Program, established in October, 1935, continued until December 1, 1937. Then, because of a lack of funds, it was discontinued. The Program accomplished considerable preliminary research designed to give information for game management practices. A brief resumé of activities follows:

Establishment of a game management demonstration area in Lebanon covering 6,625 acres. This area was carefully inventoried, giving an economic inventory showing the amount of food values and the amount of game on the area, together with the amount of live stock and the farming operations carried on in the area. A map showing the improvement by game management practices was constructed. This Lebanon area is in territory heavily grazed and practically all available land in the area was pastured.

Food patches were planted and fenced with a barbed wire in order that they might become established. Many types of food-bearing shrubs were planted in order that they might be observed as to their availability for supporting a game population.

Areas were treated to improve them for rabbit food. The improvements consisted of cutting strips of various widths in the alders. This permitted the increase of food and cover conditions for the rabbits and gave an opportunity to study the ecological changes on the area in relation to the succession of plants which grew up after the cutting.

Various types of rabbit shelters were constructed to observe their effectiveness. A meteorological station was maintained to plot the weather in relation to the abundance of game.

Controlled hunting was permitted and a permit was required of each hunter. The area was patrolled and a careful check of the kill was made. The results were carefully studied to see what increase in game was experienced from the planting of food plots and cover manipulations. The controlled hunting plan was adopted to keep the game population constant. It included as complete and accurate a pre-season hunting census as could be made. It further included a census after the season was over.

In addition to the work on the Lebanon area, careful laboratory work was carried on to understand the problems of the cottontail rabbit in Connecticut. A statistical survey, analyzing the reports of game killed taken from the hunting licenses, was supervised by the Cooperative Research Program and carried on by W. P. A. A complete report of this statistical program is available. Preliminary reports are available on the other activities of the Research Program.

## DIVISION OF WILDLIFE PROTECTION AND LAW ENFORCEMENT

THOMAS E. ROSE, *Chief*

Members of the warden service are primarily law enforcement officers charged with the duty of protecting all wildlife in the state and with the enforcement of laws relating to fish and game as well as regulations established by the Board. However, they have many other duties which are discussed in more detail later in this report.

There have been a few outstanding changes in the set-up of the warden service during the past two years which are worthy of comment. The most important are the reorganization and the warden school.

### Reorganization

At the beginning of the biennium the warden service consisted of a Chief Warden, in each county a County Warden and one full-time Deputy; and for the entire coast line, one full-time Marine Warden; a total full-time force of eighteen men. To augment this force, there were seventy-two part-time deputy wardens. Twenty of these held an appointment and badge in a more or less honorary capacity and did not take any active part in any of the duties of the warden service. The balance of the part-time force, fifty-one men and one woman, worked seasonally during the shooting and angling seasons and at such other times as the County Warden saw fit to employ them.

Funds were allocated by counties on a monthly basis, each County Warden being advised well in advance that a certain sum was allocated to his county for all warden service for a given month. This sum included personal services, supplies and materials, equipment and all other incidental expenses. The County Warden then determined the number of part-time deputies he could employ and the duration of their employment. He also determined the amount of compensation they were to receive for the use of their personally owned cars.

This system resulted in inequalities of payment and equipment for deputies. Certain deputies also had uniforms and other equipment furnished them at State expense while others had to purchase their own or be improperly equipped. This resulted in all manner of uniforms being worn, each man equipping himself to his own taste.

This informal organization resulted in lack of control and discipline so far as part-time employees were concerned.

However, the fault lay with the department inasmuch as none of the members of the service had received any training. The system had been for the County Warden to pick his own deputies and when a man had been appointed and received his badge, he would immediately be placed in the field with no training whatever. It could not be expected that they would understand the policies of the department and the sound principles that apply to any law enforcement work.

Anyone given authority can make arrests and may also make blunders which soon destroy the prestige of any law enforcement group. This department wanted and needed a warden service composed of intelligent, trained and well-informed men capable of disseminating information without distortion and to make arrests in clear-cut cases where the evidence showed a willful or deliberate disregard of the laws or regulations. Men of tolerance and patience were needed who would try to understand the other fellow's problems and give him the benefit of their knowledge of the art of enjoying the out-of-doors. The wardens should bend their efforts towards education as well as law enforcement.

By direction of the Board, the Superintendent, Assistant Superintendent and Chief Warden made careful plans for the reorganization of the warden service. In addition to personnel, consideration was also given to the areas to which these men would be assigned. Formerly, men were assigned according to county lines irrespective of other boundaries which could be considered. It was decided that more natural boundaries could be established, and a plan was successfully worked out whereby State-leased and regulated hunting areas, ponds and streams were confined to a single district although the county lines might separate them.

Eight districts have been established which conform to the number of counties. With these new districts much has been accomplished. By locating wardens at strategic points in each district, more efficient coverage is obtained with less need for travel.

An example of what has been accomplished can best be shown by the changes made in Hartford, Tolland and Middlesex Counties. In Hartford County there were 22 towns lying west and 7 lying east of the Connecticut River. At that time the two full-time wardens in Hartford County lived in the town of Granby, located in the northwest corner of the county. Part-time deputies were located at other points within the county.

The boundaries for this district have been changed by taking from the district the seven towns lying east of the Connecticut River and adding to the district three towns from the northeast corner of Litchfield County and one town from the northeast corner of New Haven County. Thus the area for the district is reduced very slightly, and by the relocation of district lines, there are now confined within the district the important State-leased streams and regulated shooting grounds in the area. The men have also been relocated, one in Granby, one in Windsor Locks and one in Farmington.

Instead of going into detail concerning the changes made in the boundaries of other districts, there is printed herein a map of the state which clearly shows the county lines and another map which shows the new district lines now established.

Because of the reorganization and the changes in boundary lines, it will be necessary to submit a bill to the legislature to change the titles of some of the members of the warden service. In order to clarify the positions in the Personnel Department, it is hoped that the term State Warden can be used.

The foregoing plans of reorganization seemed the most feasible and met with the tentative approval of the State Personnel Director. He also approved abolishing the position of part-time deputy warden and increasing the full-time warden force from 18 to 26 men plus the woman warden whom we would continue to employ on a per diem basis.

As the Merit System Act was then in effect, we realized that the men to be added to the full-time force would be selected by the Personnel Department after competitive examinations were held, and we felt confident that members of the part-time warden service who had held their positions for many years would qualify for these positions.

Before putting the reorganization plans into effect, it was decided to hold a warden school for the full-time members of the warden service and the outstanding men in the part-time service.

### Warden School

Because of limited funds we could not plan a warden school for a longer period than one month so plans were perfected for two classes each of two weeks duration, the classes to include all full-time members of the warden service, sixteen members of the part-time warden service and our woman warden.

The following courses were covered:

Policies and Programs	Identification of Trees and Shrubs
Public Relations	Relationships in Nature
Law Enforcement and Legal Procedure	Fresh Water Fish Restoration
Police Technology	Propagation of Inland Fishes
Ballistics	Conservation of Water Resources
Game Management	Marine Fisheries
Game Diseases	Physical Geography and Mapping
Control of Injurious Mammals	Preparation of Reports
Forestry in Relation to Game Management	

At the close of the school, examinations were held and nine of the part-time deputy wardens were given full-time employment pending examinations to be held by the Personnel Department.

When the examinations were given by the Personnel Department, approximately 437 persons made application to take the examinations. Many of these, of course, were not eligible because of lack of qualifica-

tions. However, 178 were eligible and took the examination which included physical, written and oral tests. A total of 43 contestants received a rating high enough to be placed on the eligible list. Of the nine part-time deputy wardens who competed, four were certified and received permanent appointments.

### **Warnings**

Wardens issue a warning to those persons who unintentionally violate the fish and game laws and regulations of the department. The table of warnings found on page 40 shows the number issued. With each warning corrective measures are taken in an educational way to give the offenders an understanding of our laws and regulations and principles of conservation.

### **Arrests**

The table of arrests and percentage of convictions on page 41 is a good indication that the wardens are arresting only those persons who are willful, deliberate or intentional violators where prosecution is justified.

### **Sportsmen Checked**

The table of sportsmen checked found on pages 41 and 42 is an index of the activity of the wardens in the field.

### **Predator Control**

The table of predator control on page 42 gives the numbers of predators destroyed by members of the warden service during the biennium.

### **Educational Work**

Members of the warden service are frequently called upon to give conservation talks before juvenile groups in schools, Boy Scout troops, nature study clubs and others interested in sports and conservation.

### **Deer Investigations**

The abundance of deer in Connecticut presents a major problem. All accidents involving vehicles and deer are investigated by members of the warden service and if a deer has been killed, the warden must dress it and dispose of the carcass as required by law.

The law permits the killing of deer by property owners with a shotgun when deer are doing damage to crops, and also provides that deer may be killed with a rifle when a permit has been obtained from this department. However, before rifle permits are issued, the District Warden must inspect the property, investigate conditions and determine whether or not deer can be controlled by the use of a shotgun. He must make certain that the person making application is familiar with

the use of a rifle and its potential dangers. He must also investigate the proximity of roads, highways and buildings to the crops which are being damaged, and report to the Hartford office with his recommendations. Such permits are not issued if there is any question of public safety involved or if the applicant merely wishes to do some deer shooting.

### **Liberation of Game Birds and Animals**

Upon the members of the warden force falls the responsibility of liberating pheasants, quail, waterfowl and raccoons. For this reason each warden must be familiar with his district and the areas capable of providing food, water and cover, and to understand this they must be familiar with game management practices.

### **Winter Feeding**

Being the field representative of the department, each District Warden is responsible for all wildlife in his district and, therefore it is his responsibility to check the food conditions for wildlife and provide grains when natural foods are diminishing. In severe winters this is a major task, but fortunately members of game clubs and other groups interested in conservation assist the members of the warden service in the distribution of grain. The efforts of these groups and individuals are sincerely appreciated by this department.

### **Fish Distribution**

It is the responsibility of the Division of Fish Restoration to raise or purchase fish for distribution throughout the state, to plan the distribution and the method to be used. The actual planting is performed by the warden service and occupies much of their time during the early spring and during the angling season. With this responsibility, the wardens must be familiar with the streams in their district, sources of water supply, pollution and waters open to the public. In addition to the streams, they must also be familiar with the ponds and lakes since pond fishing is rapidly gaining in popularity in Connecticut.

### **Water Surveys**

Members of the warden service are trained in the fundamentals of pond and stream management and they assist the Division of Fish Restoration in this work.

### **Leases and Posting**

The members of the warden service assist the Division of Land and Water Acquisition in obtaining leases for regulated shooting areas, streams and ponds and do all of the posting of these properties. Each year new areas are acquired which must be posted and on old areas, posters must be replaced. Each District Warden is responsible for all such posting in his district.

### **Hunting and Angling Accidents**

It is the desire of the department that all accidents resulting in injuries fatal or otherwise, received by persons who are hunting or angling or inflicted by licensed or non-licensed persons carrying weapons for the purpose of hunting, be investigated and statistics compiled on this subject so that control measures may be taken. During the biennium of 1936-1938 there were a number of accidents, some of which were fatal, caused by juveniles carrying .22 caliber rifles.

Parents, unmindful of the power of these weapons and the dangers attendant to their indiscriminate use, have purchased them and have permitted their children to carry them afield without training. This results in indiscriminate shooting of protected song birds, game birds and small game animals.

Considerable publicity has been given to this subject and all wardens have been instructed to check every juvenile found afield with a rifle or other weapon capable of inflicting serious or fatal injuries. Their efforts in this field are educational rather than restrictive since our future hunters by law are permitted to hunt at the age of sixteen and should have some opportunity for learning how to handle firearms with safety and discretion before they reach that age.

### **Investigation of General Complaints**

Statistics are not available on the subject, but during the course of a year many complaints are received by the warden service concerning damage being done to crops or gardens by various forms of wildlife, particularly rabbits, squirrels, skunks and woodchucks.

In our larger cities the squirrel population in the parks is very high. Although there is sufficient food and cover for these squirrels in the parks, they are constantly straying to other sections of the city and gnawing or in some other manner gaining entrance to homes where they do considerable damage.

It is surprising the great number of rabbits that inhabit small lots and fields within the city limits and we have frequently had complaints that these animals were doing damage to flower beds and nursery stock even within the heart of our larger cities.

All complaints regarding the behavior of wildlife are investigated and every control measure possible is taken to protect the possessions of the complainants.

Although the warden service does not enforce the dog law, it is interested in complaints relating to roaming dogs which disturb wildlife especially during the nesting season. We do supervise the training of hunting dogs and do all we can to keep this under control.

### **Deer Jacking**

One activity of the warden service not generally known or appreciated by property owners and sportsmen is its work relating to the enforcement of the deer jacking law.

Deer jackers in this state have taken a tremendous toll of valuable livestock thereby causing the rural property owners much concern. We must consider that the rural property owners are the custodians of practically all our wildlife. Without their cooperation there could be no hunting or fishing to any extent in this state. The warden service, therefore, feels that it is its responsibility to protect the interests of the rural property owners.

The deer jacking law enacted during the last session of the legislature, defining a jack light and establishing the possession of certain types of weapons and ammunition with artificial lights as prima facie cases, has aided considerably in combatting this evil.

During the fall, winter and early spring months, deer jackers are very active and the members of the warden service spend many nights attempting to track them down. Deer jackers are not sportsmen and we propose to bend every effort to cause their apprehension and prosecution.

### Patrolmen

During the hunting and angling seasons it is impossible for the members of the full-time warden service to patrol and supervise the hunting and fishing on all of our State-owned, State-leased and State-regulated shooting grounds, streams and ponds. We have therefore set up the position of patrolman. During the fall of 1937 we had twenty-five State-owned, State-leased and State-regulated shooting areas. On one of these areas, which is rather large, two patrolmen were employed and on each of the others, one patrolman was employed. During the spring of 1938 we employed seventeen men to patrol and supervise fishing on State-owned and State-leased ponds and streams.

The employment of patrolmen is for a three months period and is on a contract basis which provides that they shall work a given number of days during the period. These men are sportsmen known to the property owners on the various areas with whom they must have contact during the season, and the amount of their compensation for the actual work which we expect them to do does not make this a much sought-after position. These men are not uniformed and must furnish their own transportation.

Patrolmen are empowered to enforce regulations. When they find an offender, they are authorized to take his license and button, weapon, rod or other evidence used in committing the offense and also game or fish illegally taken. All of this evidence is turned over to the District Warden who makes a careful investigation and decides whether or not there shall be prosecution.

In selecting our patrolmen we are attempting to pick men of character, tolerance and patience. However, these men are not given the same training as members of our full-time force and therefore can-

not be expected to be as familiar with the policies, programs, procedures and general laws and regulations as the members of the full-time force.

### **Voluntary Patrolmen**

The funds of the department do not permit the employment of patrolmen on all of our regulated shooting grounds, lakes and ponds. We are very fortunate to have the cooperation of sportsmen and property owners interested in certain areas, lakes and ponds which are open to public hunting and fishing under regulation and who devote much of their time to the enforcement of these regulations without compensation. A limited number of such appointments have been made and only to men of highest character. They have been given the title of voluntary patrolmen and are empowered to enforce regulations.

These men, like the patrolmen, are not given a course of training and therefore cannot be expected to understand the many ramifications of this department. We therefore solicit the cooperation of the sportsmen in assisting these patrolmen in the enforcement of the fish and game laws.

### **Game Guardians**

A few years ago during the serious outbreak of violations, an organization of sportsmen and others interested in wildlife and conservation was formed to assist the members of the warden service by reporting violations. This group was very properly given the title of Game Guardians.

Those who have received such appointments have a sincere interest in the wildlife resources of the state and when violations or other irregularities come to their notice, they have pledged themselves to report them to the District Warden with the understanding that they will support our laws and regulations and, if necessary, appear in court to testify for the State.

These gentlemen are not invested with any police authority. Therefore, they do not enforce laws or regulations but their valuable cooperation and assistance is sincerely appreciated by this department.

### **Conclusion**

This report and explanation of the duties and various activities of the members of the warden service is written to explain more thoroughly the responsibilities of the warden service and the valuable functions that the organization performs in the conservation of Connecticut's wildlife.

## ACKNOWLEDGEMENTS

The State Board of Fisheries and Game takes this opportunity of acknowledging the very helpful cooperation of the other Departments of the State and of the Federal Government; also the assistance of the sportsmen's clubs and the civic organizations which contribute to the restoration and conservation of our wildlife resources.

The ready assistance of the Press of Connecticut and the helpful criticisms of the Rod and Gun editors of the newspapers have done much to put the program of the department before the general public.

We particularly wish to thank the many public officials who gave so freely of their time in instruction in the first warden school held by the State. Among these are members of the State Police Department, the State Water Commission, the State Forestry Department and the Connecticut State College.

We also wish to express our appreciation for the valuable cooperation received from the following agencies:

- Civilian Conservation Corps
- Works Progress Administration
- Federal Emergency Relief Administration
- Farm Security Administration
- U. S. Bureau of Fisheries
- U. S. Bureau of Biological Survey
- State Park and Forest Commission
- Commission on Forests and Wildlife
- State Water Commission
- Connecticut State College
- Connecticut State Prison Farm, Enfield
- State Police Department
- Mansfield State Training School and Hospital
- Connecticut State Farm for Women, Niantic
- Commissioner on Domestic Animals
- State Department of Aeronautics
- 43rd Division of Aviation, C. N. G.
- State Department of Health
- State Highway Department
- State Department of Agriculture

### Employees

The Commissioners join with the Superintendent and the Division Chiefs in acknowledging the loyal and efficient service rendered by all the employees. It is felt that their cooperation has done much in meeting the problems in the field of wildlife conservation and restoration in this state.

**FINANCIAL STATEMENT**

July 1, 1936—June 30, 1937

**Means of Financing***Working Balances—July 1, 1936*

Game Fund .....	\$ 11,510.73
Inland Fish Fund .....	36,143.87
Marine Fund .....	4,836.54

*Receipts from sale of hunting and angling licenses and other sources*

Game Fund .....	89,582.38
Inland Fish Fund .....	114,923.93
Marine Fund .....	4,162.00

*Appropriations*

Administration .....	13,150.00
Protection and Propagation of Fish (Inland waters) .....	5,000.00
Protection and Propagation of Fish (Marine waters) .....	10,000.00
Acquisition and maintenance of Fishing and Hunting Areas .....	25,000.00

Total Cash Resources .....	\$314,309.45
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**Expenditures***Division of Administration*

Personal Services .....	\$ 20,596.47
Expenses of Board .....	827.90
Expenses of Superintendent .....	1,351.28
Expenses of Office .....	3,591.99
	<hr/>
	\$ 26,367.64

*Division of Fish Restoration*  
*Inland Fisheries*

Field Supervision .....	\$ 10,743.57
Trout Restoration .....	52,424.39
Pond Fish Restoration .....	4,648.46
Shad Restoration .....	2,671.27
Permanent Improvements to Hatcheries .....	2,218.92
Maintenance of Fishing Grounds .....	960.30
Professional Services .....	20.00
Purchase of Licenses and Buttons .....	1,168.91
Purchase of Boats and Equipment .....	944.90
Miscellaneous .....	393.85
	<hr/>
	\$ 76,194.57

*Marine Fisheries*

Salary and Expenses of Marine Warden .....	\$ 2,817.03
Lobster Restoration .....	7,817.32
Flatfish Restoration .....	908.83
Smelt Restoration .....	771.71
Scientific Investigation .....	1,386.53
Miscellaneous .....	361.64
	<hr/>
	\$ 14,063.06

**FINANCIAL STATEMENT****July 1, 1936—June 30, 1937***Division of Game Restoration*

Field Supervision .....	\$ 2,817.65
Game Refuges .....	10,073.68
Game Stocking Program .....	26,839.50
Game Management .....	5,266.10
Purchase of Licenses and Buttons .....	994.58
Miscellaneous .....	443.51
	<hr/>
	\$ 46,435.02

*Division of Law Enforcement*

Personal Services .....	\$ 53,147.80
Travel and Other Expenses .....	22,437.30
	<hr/>
	\$ 75,585.10

*Division of Land and Water Acquisition*

Salary and Expenses of Chief of Division .....	\$ 2,012.89
Acquisition of Fishing Areas .....	5,716.53
Acquisition of Hunting Areas .....	13,684.02
	<hr/>
	\$ 21,413.44

Total Expenditures .....	\$260,058.83
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*Working Balances, June 30, 1937*

Game Fund .....	\$ 12,182.90
Inland Fish Fund .....	33,545.68
Marine Fund .....	4,935.48
	<hr/>
	\$ 50,664.06

Appropriation Balances reverting to General Fund .....	\$ 3,586.56
	<hr/>

\$314,309.45	\$314,309.45
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**FINANCIAL STATEMENT**

July 1, 1937—June 30, 1938

**Means of Financing***Working Balances—July 1, 1937*

Game Fund .....	\$ 12,182.90
Inland Fish Fund .....	33,545.68
Marine Fund .....	4,935.48

*Receipts from sale of hunting and angling licenses and other sources*

Game Fund .....	88,012.03
Inland Fish Fund .....	115,909.28
Marine Fund .....	3,912.60

*Appropriations*

Administration .....	13,150.00
Protection and Propagation of Fish (Inland waters) .....	5,000.00
Protection and Propagation of Fish (Marine waters) .....	10,000.00
Acquisition and Maintenance of Fishing and Hunting Areas .....	25,000.00
Purchase of egg-bearing lobsters .....	5,000.00

Total Cash Resources .....	\$316,647.97
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**Expenditures***Division of Administration*

Personal Services .....	\$ 20,660.12
Expenses of Board .....	775.03
Expenses of Superintendent .....	1,362.26
Expenses of Office .....	3,064.52
	<hr/>
	\$ 25,861.93

*Division of Fish Restoration  
Inland Fisheries*

Field Supervision .....	\$ 11,697.81
Trout Restoration .....	37,225.01
Pond Fish Restoration .....	2,060.08
Shad Restoration .....	2,466.00
Permanent Improvement to Hatcheries .....	952.48
Purchase of Licenses and Buttons .....	1,427.70
Purchase of Boats and Equipment .....	155.65
Miscellaneous .....	38.17
	<hr/>
	\$ 56,022.90

*Marine Fisheries*

Salary and Expenses of Marine Warden .....	\$ 3,480.02
Lobster Restoration .....	6,090.46
Flatfish Restoration .....	889.11
Smelt Restoration .....	574.88
Scientific Investigation .....	370.35
Miscellaneous .....	204.44
	<hr/>
	\$ 11,609.26
Purchase of egg-bearing Lobsters (Special Appropriation) .....	\$ 2,122.47

**FINANCIAL STATEMENT****July 1, 1937—June 30, 1938***Division of Game Restoration*

Field Supervision .....	\$ 1,901.35
Game Refuges .....	6,390.46
Game Stocking Program .....	28,880.33
Game Management .....	2,277.06
Purchase of Licenses and Buttons .....	1,262.91
Miscellaneous .....	171.26
	<hr/>
	\$ 40,883.37

*Division of Law Enforcement*

Personal Services .....	\$ 44,616.61
Travel and Other Expenses .....	26,237.03
	<hr/>
	\$ 70,853.64

*Division of Land and Water Acquisition*

Salary and Expenses of Chief of Division .....	\$ 4,168.22
Acquisition and Maintenance of Fishing Areas .....	13,265.93
Acquisition and Maintenance of Hunting Areas .....	5,791.53
	<hr/>
	\$ 23,225.68

Total Expenditures .....	<hr/> <hr/>	\$230,579.25
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*Working Balances, June 30, 1938*

Game Fund .....	\$ 17,195.50
Inland Fish Fund .....	56,889.89
Marine Fund .....	5,329.12
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	\$ 79,414.51

Appropriation Balances reverting to General Fund .....	\$ 6,654.21
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	<hr/> <hr/>	<hr/> <hr/>	\$316,647.97	\$316,647.97
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**SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1936**

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minors)	Non-resident Angling	Alien Angling	Non-resident Hunting	Non-resident Combination	Non-resident Property Owners Angling	Alien Property Owners Angling	Non-resident Property Owners Hunting	Non-resident Property Owners Combination	*Special Combination	**Special Angling
Hartford .....	6,805	4,018	1,962	173	166	127	74	64	29	1	15	55	1	—	33	26
New Haven .....	5,279	4,120	1,440	96	111	77	34	66	9	2	12	62	3	4	32	20
New London .....	1,444	1,484	496	103	76	42	60	16	36	5	10	22	17	6	30	17
Fairfield .....	3,931	4,305	1,379	99	84	56	219	34	50	3	50	12	18	17	24	43
Windham .....	1,294	895	455	77	54	31	159	18	32	5	10	11	11	9	42	19
Litchfield .....	3,403	1,841	1,070	122	79	39	271	28	42	6	76	25	11	15	52	18
Middlesex .....	763	1,071	285	89	78	56	26	3	29	—	5	3	3	—	25	4
Tolland .....	982	616	347	33	44	25	65	7	8	4	13	15	2	3	26	6
Office .....	—	—	—	—	—	—	15	—	6	—	—	—	—	—	—	—
Totals .....	23,901	18,350	7,434	792	692	453	923	236	241	26	191	205	66	54	264	153

\*Resident Hunting, Trapping and Angling.

\*\*For residents over sixty-five years of age. Issued on payment of recording fee only.

# SUMMARY OF ANGLING AND HUNTING LICENSES

## ISSUED FOR THE YEAR 1937

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minors)	Non-resident Angling	Alien Angling	Non-resident Hunting	Non-resident Combination	Non-resident Property Owners Angling	Alien Property Owners Angling	Non-resident Property Owners Hunting	Non-resident Property Owners Combination	*Special Combination	**Special
Hartford .....	8,213	4,171	2,040	183	178	140	61	99	24	3	12	73	2	1	44	542
New Haven .....	6,436	4,293	1,586	122	131	78	43	84	13	2	13	81	3	5	39	369
New London .....	1,642	1,493	484	111	103	40	58	24	20	4	9	25	6	3	37	272
Fairfield .....	4,376	4,228	1,363	115	115	67	211	46	44	1	58	16	11	9	42	402
Windham .....	1,377	939	395	73	78	45	158	21	31	7	9	10	8	9	51	196
Litchfield .....	4,047	1,948	1,067	119	103	43	319	48	39	5	82	35	2	16	65	300
Middlesex .....	880	1,023	287	84	80	71	28	6	25	—	3	3	3	2	30	130
Tolland .....	1,127	591	323	66	45	30	58	18	10	3	13	15	7	2	35	118
Office .....	—	—	—	—	—	—	19	—	—	1	—	—	—	—	—	—
Totals .....	28,098	18,686	7,545	873	833	514	955	346	206	26	199	258	42	47	343	2,329

\*Resident Hunting, Trapping and Angling.

\*\*For residents over sixty-five years of age. Issued on payment of recording fee only. This license has been issued for hunting, angling, or combination hunting and angling privileges since July 1, 1937.

## NUMBER OF OFFICIAL WARNINGS ISSUED

July 1, 1936 to June 30, 1937

Month	County								Total
	Hartford	New Haven	New London	Fairfield	Windham	Litchfield	Middlesex	Tolland	
July .....	2	18	5	5	11	10	2	6	59
August .....	3	5	3	5	1	14	13	3	47
September .....	5	5	4	5	—	6	8	2	35
October .....	21	29	14	6	2	7	30	8	117
November .....	8	20	10	24	—	9	48	12	131
December .....	4	1	1	10	4	11	26	6	63
January .....	3	11	3	3	6	3	2	2	33
February .....	—	12	—	6	—	7	8	—	33
March .....	1	—	1	2	1	—	1	1	7
April .....	14	4	6	—	2	7	7	1	41
May .....	3	16	3	6	5	—	18	11	62
June .....	2	4	3	2	4	15	8	6	44
Totals .....	66	125	53	74	36	89	171	58	672

July 1, 1937 to June 30, 1938

July .....	1	10	6	10	1	11	—	1	40
August* .....	—	3	5	2	1	9	8	—	28
September .....	—	5	—	1	2	4	2	1	15
October .....	4	4	2	9	1	1	—	4	25
November .....	7	7	3	11	2	5	2	6	43
December .....	8	1	3	4	2	2	2	5	27
January .....	2	5	—	—	4	1	—	1	13
February .....	2	2	3	6	—	3	—	1	17
March .....	9	5	13	3	—	1	—	1	32
April .....	4	4	12	—	10	5	3	5	43
May .....	7	9	1	3	3	9	—	13	45
June .....	5	3	4	4	12	18	13	1	60
Totals .....	49	58	52	53	38	69	30	39	388
GRAND TOTALS .....	115	183	105	127	74	158	201	97	1,060

\*Reported by district starting August, 1937.

**ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS**

July 1, 1936 to June 30, 1938

District	Fish Law Arrests	Game Law Arrests	Total Arrests	Total Convictions	Percentage of Convictions	Fines Paid	Costs Paid	Total Fines and Costs
Hartford .....	26	41	67	56	83%	\$ 427.00	\$ 421.62	\$ 848.62
New Haven .....	22	18	40	39	98%	139.00	319.28	458.28
New London .....	18	27	45	40	89%	222.50	382.05	604.55
Fairfield .....	18	37	55	50	91%	350.00	467.93	817.93
Windham .....	19	35	54	54	100%	332.00	473.75	805.75
Litchfield .....	32	55	87	81	93%	846.00	799.76	1,645.76
Middlesex .....	21	31	52	44	85%	368.00	554.47	922.47
Tolland .....	9	30	39	39	100%	148.00	355.99	503.99
Totals .....	165	274	439	403	92%	\$2,832.50	\$3,774.85	\$6,607.35

**NUMBER OF SPORTSMEN CHECKED**

July 1, 1936 to June 30, 1937

## County

Month	Hartford	New Haven	New London	Fairfield	Windham	Litchfield	Middlesex	Tolland	Total
July .....	411	978	230	2,435	487	3,192	2,274	1,486	11,493
August .....	254	616	153	1,368	215	1,967	1,553	779	6,905
September .....	396	429	77	917	53	1,559	1,118	297	4,846
October .....	1,664	666	457	1,410	324	1,033	825	786	7,165
November .....	1,373	896	410	1,285	119	724	588	434	5,829
December .....	380	331	20	738	79	1,066	130	197	2,941
January .....	101	100	13	212	—	305	17	35	783
February .....	46	135	39	408	66	278	109	103	1,184
March .....	2	1	7	—	—	—	3	1	14
April .....	1,870	2,096	991	2,516	1,473	3,573	1,753	2,776	17,048
May .....	2,038	2,186	665	3,270	1,424	4,655	2,146	3,048	19,432
June .....	1,184	1,003	294	1,643	552	2,138	857	958	8,629
Totals .....	9,719	9,437	3,356	16,202	4,792	20,490	11,373	10,900	86,269

**NUMBER OF SPORTSMEN CHECKED**

July 1, 1937 to June 30, 1938

July .....	843	839	259	1,388	129	906	202	415	4,981
August .....	484	288	—	154	—	79	—	—	1,005
September .....	343	—	—	105	—	13	—	—	461
October* .....	1,033	594	278	520	84	304	145	499	3,457
November .....	1,049	776	233	960	39	584	231	611	4,483
December .....	289	450	80	766	54	1,352	283	329	3,603
January .....	50	383	88	967	144	1,100	152	63	2,947
February .....	49	71	—	172	—	456	17	—	765
March .....	5	32	—	5	—	8	—	—	50
April .....	2,456	2,008	899	1,876	2,261	3,479	1,913	1,934	16,826
May .....	2,044	1,407	526	1,618	1,433	4,622	1,995	1,569	15,214
June .....	1,279	647	320	1,220	844	2,808	1,053	689	8,860
Totals .....	9,924	7,495	2,683	9,751	4,988	15,711	5,991	6,109	62,652
Grand Totals ....	19,643	16,932	6,039	25,953	9,780	36,201	17,364	17,009	148,921

\*Reported by district starting October, 1937.

**REPORT OF PREDATOR CONTROL  
BY WARDENS**

July 1, 1936 to June 30, 1938

Species	Number
Red Fox .....	94
Grey Fox .....	53
Total Fox .....	147
Wild House Cat .....	1,250
Red Squirrel .....	482
Weasel .....	70
Skunk .....	133
Porcupine .....	1
Harmful Hawks .....	513
Harmful Owls .....	60
Crow .....	2,171
Starling .....	205
Water Snake .....	2,290
Snapping Turtle .....	2,950
Weight of Turtles .....	51,659 lbs.

## REPORT OF DEER KILLED

July 1, 1936 to June 30, 1937

## CAUSE OF DEATH

Area*	Accident	Trains	Dogs	Autos	Destroying Property	Found Injured	Cause Unknown	Killed Illegally	Totals
Hartford .....	1	—	2	5	2	1	2	1	14
New Haven .....	3	3	—	10	8	2	—	5	31
New London .....	2	—	2	11	16	5	2	6	44
Fairfield .....	3	3	2	14	11	4	—	2	39
Windham .....	—	2	3	9	21	1	8	3	47
Litchfield .....	7	2	11	18	43	7	5	17	110
Middlesex .....	2	1	—	11	11	1	6	7	39
Tolland .....	—	1	1	9	20	—	—	—	31
Totals .....	18	12	21	87	132	21	23	41	355

July 1, 1937 to June 30, 1938

Hartford .....	—	—	1	17	1	2	1	1	23
New Haven .....	2	1	1	14	8	3	1	3	33
New London .....	1	—	—	5	8	2	1	4	21
Fairfield .....	7	1	3	11	5	3	4	9	43
Windham .....	7	1	—	14	22	4	3	4	55
Litchfield .....	3	4	6	16	49	10	3	14	105
Middlesex .....	2	—	1	11	10	3	2	4	33
Tolland .....	—	—	4	9	13	—	4	2	32
Totals .....	22	7	16	97	116	27	19	41	345
GRAND TOTALS .....	40	19	37	184	248	48	42	82	700

\*Reported by counties to June 30, 1937

\*Reported by districts commencing July 1, 1937







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**State of Connecticut**  
**PUBLIC DOCUMENT No. 19**

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**TWENTY-THIRD BIENNIAL REPORT**

*OF THE*

**STATE BOARD OF FISHERIES  
AND GAME**

*TO*

**HIS EXCELLENCY, THE GOVERNOR  
AND THE GENERAL ASSEMBLY**

*FOR THE YEARS*

**1938-1940**





**State of Connecticut**  
**PUBLIC DOCUMENT No. 19**

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AND THE GENERAL ASSEMBLY**

*FOR THE YEARS*

**1938-1940**

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1938-40

**HARTFORD**

**PUBLISHED BY THE STATE**

Printed under authority of Section 142  
General Statutes of Connecticut, Revision of 1930.

JOHN M. DOWE,  
*State Comptroller.*

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January 2, 1941

TO HIS EXCELLENCY, RAYMOND E. BALDWIN

Governor of Connecticut

Executive Chambers

Hartford, Connecticut

SIR:

The Commissioners of the State Board of Fisheries and Game respectfully submit herewith the Twenty-third Biennial Report of the activities of this department, compiled by the heads of the various divisions and covering the two-year period ending June 30, 1940.

The public demand for more fish and game is steadily on the increase, as it has been since the establishment of this department in 1867. It would be a disappointment to those who carry on this work if this were not so. Moreover, this demand during the past few years has become far more coherent. It is largely due to the fine cooperation of such sportsmen's organizations as the Connecticut State League of Sportsmen's Clubs, County Associations of Sportsmen, and others, that the department can coordinate its plan with public needs. There is ever a necessity for complete understanding of each others' problems between the department and the sportsmen of Connecticut.

Fish production in the state has always been hampered by the lack of a large central rearing plant. However, the department has increased, and plans to further increase, the number of rearing pools to off-set this deficiency. Double the number of our present fish output is the goal, a goal which needs additional resources for its attainment.

The pond survey which has finished its third year continually brings to light factors of great value in bettering this type of fishing. A full report of the activities of the pond survey will soon be forthcoming and should be of interest to both the fish culturist and the sportsman.

A good deal of regulated shooting land has been added to our open areas and, through the cooperation of the department, the land-owners, and the sportsmen's clubs which sponsor such areas, has proved generally popular and successful.

Further, there is an awakening interest in the possibilities of State Forests which are open for the most part to public hunting. The Park and Forest Commission and the Forest and Wild Life Commission have done fine work both in purchasing land for the sportsmen's use and in improving the environment for game through the State Forests as a whole.

Rearing of pheasant and quail has been brought to a high standard by the game breeders of Connecticut and it is the policy of the department to stock Connecticut covers with Connecticut reared birds. An increase

in the stocking of pheasants, with some modifications in the present methods, is planned by the department during the coming two years. In connection with an improved stocking program, it should be mentioned that federal funds have been made available to the State under the Pittman-Robertson Act. With the use of these funds we have been able to set up projects for the study of grouse and pheasant habits in this state which should result in valuable, practical knowledge in the handling of forest lands for grouse and agricultural lands for pheasants. In addition to this financial aid from the Federal government, a great deal of physical aid in conservation has been given by Boy Scout organizations and 4-H Clubs throughout the State. Their interest in the winter feeding of game and song birds has materially aided in maintaining our supply throughout the winters.

Marine activities of the department were curtailed during the last year and a half due to the loss of the lobster hatchery in the hurricane of 1938. One patrol boat and other equipment was also lost at that time. However, the new hatchery completed in June of this year has a greatly increased capacity and efficiency. This division is now in a position to expand considerably its production and should be of material benefit to the commercial fishermen.

These and many other activities which are more specifically outlined in the ensuing report form the work of this department, work which we earnestly hope adds to the fullness of the lives of Connecticut's citizens.

Respectfully submitted,

PHILIP C. BARNEY, Chairman

CHARLES F. GRIFFIN

FRANCIS L. SHEANE

BIENNIAL REPORT

1940

Division of Administration

TO THE COMMISSIONERS,  
STATE BOARD OF FISHERIES AND GAME:

I have the honor to submit herewith a report on the activities of this department for the biennial period ending June 30, 1940.

Respectfully,

R. P. HUNTER, Superintendent

Hartford, Conn., January 2, 1941

## BIENNIAL REPORT

1938-1940

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### Division of Administration

Although the work of the office has increased considerably in the past ten years, the staff is no larger today than it was in 1930.

During this period a Game Division has been created in the department with three new employees which has resulted in an increase in stenographic and clerical work. In 1937, by act of the legislature, three new State agencies were provided for: the Budget Division, the Personnel Division and the Purchasing Division. The creation of these new agencies has also added to the work of the office.

The personnel of this division consists of seven employees. Following is a list of activities for which the office is responsible:

#### I. Accounting

1. Preparing and typing all purchase orders, commitments, requisitions, travel authorizations, invoice lists, deposits and payrolls.
2. Auditing and recording all bills, vouchers, payrolls and expense accounts submitted to the Comptroller for payment. Average number of bills audited for payment, 150 per month.
3. Maintaining control ledger and allotment ledger.
4. Cost records of department cars.

#### II. Licenses and Permits

1. Issuance of game breeders' licenses, taxidermists' licenses, commercial fishing licenses, deer permits, commercial hatchery licenses, licenses for fur-buyers and agents of fur-buyers, importation and exportation permits, field trial permits, registration of private ponds, private shooting preserves, duplicate licenses and buttons and trapping permits. There are approximately five thousand of these licenses and permits issued during the course of a year.
2. All hunting and fishing licenses issued by town clerks are checked against reports which they send in, and their receipts covering sale of licenses are verified with the Treasurer's records. There are over sixty thousand licenses issued each year. Detailed records are kept in this office showing the number of licenses issued by each town clerk each month and payments made.

### III. Records

The following records are kept in the office: arrest reports, official warnings, deer killing reports, sportsmen checked, fish and game taken by sportsmen as reported by wardens and patrolmen, activities of wardens and patrolmen, records of fish planted by streams and ponds, reports of private shooting preserves, reports of predators and fur-bearers taken by trappers on State-owned properties, personnel records of all permanent employees.

### IV. Leases on State-leased Fishing and Hunting Areas

The office keeps records of all leases on hunting and fishing areas and is responsible for seeing that leases are renewed on expiration dates. Leases are prepared and turned over to the wardens who secure signatures.

### V. Mimeograph Work

The department does its own mimeograph work, getting out ninety-seven jobs, totaling 392 stencils, in 1938, and 122 jobs, totaling 174 stencils, in 1939. The number of copies of each stencil which is run off ranges from twenty-five to thirteen hundred.

### VI. Other Office Activities

Other office activities include preparation of financial reports for the Board and for Division Heads, collecting material for the biennial report, revision of fish and game law book every two years, preparation of copy and specifications for printing hunting and fishing licenses and estimating allotments for town clerks, preparation of copy for hunting and fishing pamphlets and preparation of the departmental budget.

### Advisory Council

In 1932 at the suggestion of Thomas H. Beck, Chairman of the Board at that time, an organization of sixteen sportsmen, two from each county, was formed for the purpose of improving and increasing contacts and cooperation between the Board and the sportsmen of the state.

The original members were selected by the Commissioners. Since that time vacancies in the Council have been filled by the process of nomination and election by the Council members. The by-laws provide that four members retire annually and four new members be chosen to fill the vacancies.

The Council meets with the Board and staff members once a month in an advisory capacity. An opportunity is given to the members to become thoroughly familiar with the problems and activities of the department so that they may inform the sportsmen of their respective counties of the programs and policies of the Board. It further provides an opportunity for the Board to receive suggestions and advice from the Council members of ways and means to improve the service.

This organization has proved very helpful as a coordinating agency and the Board is deeply appreciative of the contributions in time, thought and helpful advice which it has received from it.

The present membership of the Council is given below:

### MEMBERS OF THE ADVISORY COUNCIL

Henry Rocano, Danbury, President

Ray Benson, New Haven, Vice President.

#### Hartford County

Wilfred H. Dresser, Hartford  
Charles H. Vaill, Hartford

#### New Haven County

Ray Benson, New Haven  
J. P. Montgomery, Hamden

#### New London County

Samuel Ferguson, Jr., Waterford  
Edward L. Hall, Norwich

#### Fairfield County

Henry Rocano, Danbury  
George S. Hopkins, South Norwalk

#### Windham County

Leslie Hartson, Windham  
George Whitney, Thompson

#### Litchfield County

Douglas G. Adam, Canaan  
James W. Concannon, Torrington

#### Middlesex County

James H. L. Ott, Chester  
Northam L. Wright, Essex

#### Tolland County

L. M. Dillon, Rockville  
Neil W. Hosley, Storrs.

For a portion of the time covered by this report, Mr. John P. Leonard, Hartford County, Mr. A. L. Weatherhead, Windham County, Mr. Julian L. Williams, New London County, Mr. Frederick Scholes, Middlesex County, Mr. W. Lee White, Fairfield County, and Mr. Raymond I. Longley, Tolland County, served on the Council but their terms have expired. Erich Koehler, deceased.

### Land and Water Acquisition

Since the inception of the "Connecticut Plan" of acquiring fishing and hunting rights for public use by lease or purchase, the department has had a Field Agent in charge of this work. The legislature of 1939 made no provision for this position. During the year 1939-40 renewals of leases have been obtained by the warden service as mentioned before.

During the last biennium approximately 275 leases have been renewed or acquired on streams, and 112 leases on public shooting grounds have been renewed.

The rate paid for hunting rights is ten cents per acre per year. The rate for fishing rights is based on the length of the stream, the location of the property in relation to the leased portion and the importance of the stream. In return for the leases, in addition to a cash compensation, the State provides patrol service, stocking and posters.

In addition to renewal leases, the department has acquired by purchase the following: Lake Holbrook in Bolton, 6.5 acres in Cromwell Meadows, twelve acres in the Shade Swamp Sanctuary, and forty-two acres adjoining the Burlington Hatchery. The State received as gifts from the Bolton Reservoir and Water Power Company, Willimantic Reservoir (Bolton Lake) in the towns of Bolton, Tolland, and Vernon, and twenty-nine acres of land on the Salmon River at Leesville.

#### Members of Administrative Division

Mildred K. Bartle, Executive Assistant  
Gilbert H. Ahlgren, Accountant-Auditor  
Rose Sharfman, Clerk  
Virginia L. Bencks, Stenographer  
Faith Crocker, Stenographer  
Eunice E. Fisher, Clerk  
Francis Kuchta, Clerk

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### Division of Game Restoration

Prior to 1938, all game management activities were carried on by the Superintendent of the State Board of Fisheries and Game along with his administrative duties. Early in the fiscal year 1938-39 the Board approved the appointment of a Division Chief to be responsible for the Division of Game Restoration. The work to be carried on by this division included: (1) planning of game liberations, (2) establishment and improvement of wildlife sanctuary and refuge systems, (3) wildlife administration and improvement of State-owned and controlled lands, (4) plans for the expenditure of Pittman-Robertson funds, (5) responsibility for conduct of private shooting preserves, (6) inspection of mosquito control projects and reports to Mosquito Board when wildlife values are involved, and (7) assistance to those groups who wish to practice game management.

At present the division organization consists of a Game Management Supervisor, an Assistant to the Game Management Supervisor, who is in charge of Federal projects—Pittman Robertson—and 75 per cent of whose salary is paid by the Federal Government, and a Statistical Clerk.

## SHOOTING GROUNDS

In a state as densely populated as Connecticut (one person to every two acres), providing lands open to public shooting is an important problem. In addition to private lands which may be open to public shooting, there are three types of shooting grounds made available for use by hunters: State-owned, State-leased and State-regulated. The map on the page following indicates the location of these three types of shooting grounds.

### State-Owned Shooting Areas

There are twenty-one State forests comprising approximately seventy-six thousand acres that are open to public shooting, and are posted with signs reading, "State Forests, Hunting Permitted." The Mohawk State Forest in Goshen and Cornwall and Mattatuck State Forest in Thomaston and Plymouth are closed to hunting and are so posted. In addition to this State Forest land, the State Board of Fisheries and Game have acquired lands in Farmington, Cromwell Meadows, Durham Meadows, Great Island and Lord's Cove. These lands are primarily waterfowl shooting grounds with the exception of Farmington. State Parks are not open to public shooting. A small portion of Hammonasset State Park where six blinds and two shooting positions have been constructed is open to duck hunting. Permits, which may be obtained without charge from the park police, are required for hunting in these blinds.

### State-Leased Shooting Areas

Legislative appropriations allow the leasing of approximately twenty-seven thousand acres of land in the towns of Farmington, Ellington, Vernon, Somers, Monroe, Newtown and Shelton. Signs reading, "State-leased Shooting—Hunting Permitted," will be found on these lands. Only a Connecticut hunting license is required to hunt on these areas.

### State-Regulated Shooting Areas

There are twenty-six regulated shooting areas comprising approximately 160,000 acres that are open to public shooting. These areas are posted with signs reading, "Permit Required to Hunt on This Area." This program is sponsored by either a landowners' association or by the local Rod and Gun Club, acting as the landowners' agents. In each case, the State Board of Fisheries and Game is cooperating with the group through regulations and patrol with two objects in mind—to protect the landowners' interests against damage by thoughtless persons and to provide adequate sport for the increasing number of hunters. Standard permits have been provided the land owners or their agents on each area. Season permits are issued to the groups sponsoring the area, while the visiting sportsmen must obtain a daily permit. The daily permit may be obtained from the landowner or at some point designated by the local

**REGULATED AREAS**  
PERMITS REQUIRED

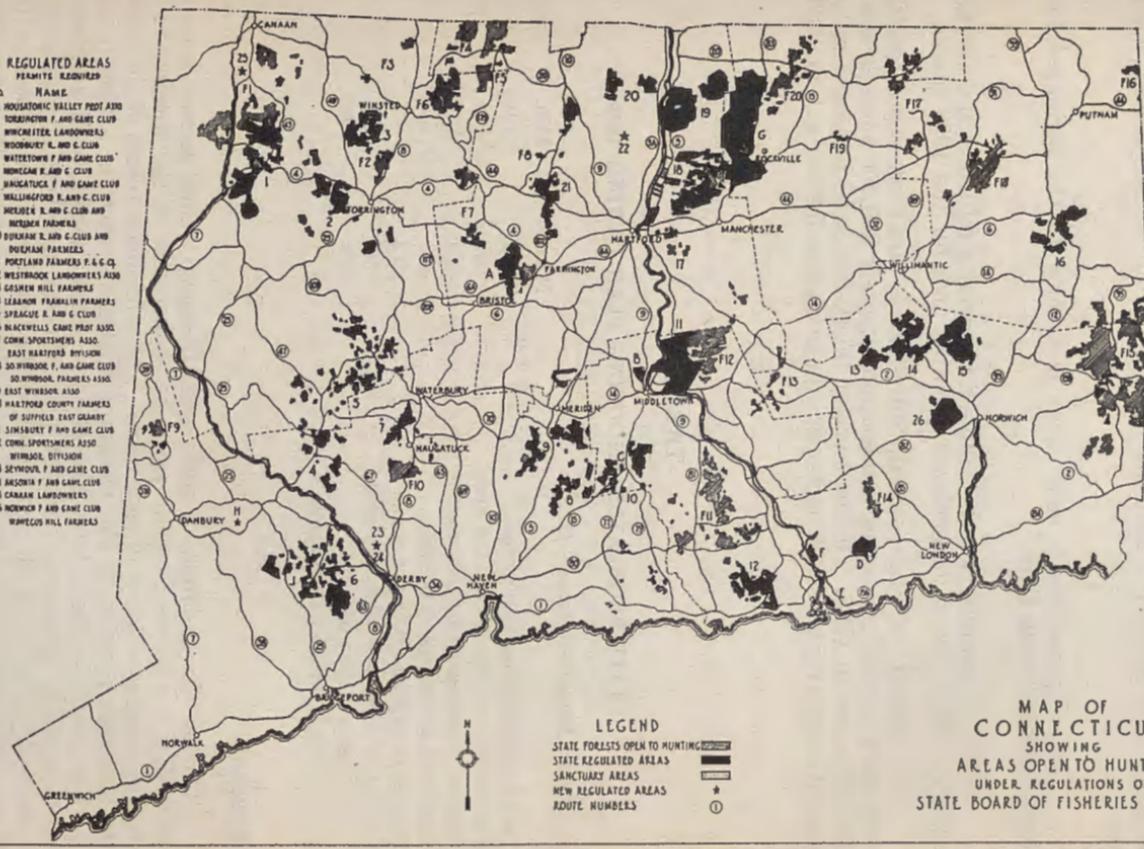
- | No. | NAME                        |
|-----|-----------------------------|
| 1   | INDUSTRIAL VALLEY PROT ASSO |
| 2   | TORINGTON F AND GAME CLUB   |
| 3   | WINDHAM F AND GAME CLUB     |
| 4   | WINDHAM F AND GAME CLUB     |
| 5   | WATERBURY F AND GAME CLUB   |
| 6   | WINDHAM F AND GAME CLUB     |
| 7   | WINDHAM F AND GAME CLUB     |
| 8   | WINDHAM F AND GAME CLUB     |
| 9   | WINDHAM F AND GAME CLUB     |
| 10  | WINDHAM F AND GAME CLUB     |
| 11  | WINDHAM F AND GAME CLUB     |
| 12  | WINDHAM F AND GAME CLUB     |
| 13  | WINDHAM F AND GAME CLUB     |
| 14  | WINDHAM F AND GAME CLUB     |
| 15  | WINDHAM F AND GAME CLUB     |
| 16  | WINDHAM F AND GAME CLUB     |
| 17  | WINDHAM F AND GAME CLUB     |
| 18  | WINDHAM F AND GAME CLUB     |
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| 21  | WINDHAM F AND GAME CLUB     |
| 22  | WINDHAM F AND GAME CLUB     |
| 23  | WINDHAM F AND GAME CLUB     |
| 24  | WINDHAM F AND GAME CLUB     |
| 25  | WINDHAM F AND GAME CLUB     |
| 26  | WINDHAM F AND GAME CLUB     |

**STATE FORESTS**

- | NO. | NAME            | LOCATION     |
|-----|-----------------|--------------|
| F1  | MOUNTAIN SHARKE | and          |
| F2  | PAUGWIT         | TORINGTON    |
| F3  | ALGONQUIN       | COLEBROOK    |
| F4  | TURKIS          | HARTLAND     |
| F5  | PEOPLES         | BAKERSFIELD  |
| F6  | MR ELLIOTT      | BAKERSFIELD  |
| F7  | REPAIRS         | NEW HARTFORD |
| F8  | SIMSBOURY       | SIMSBOURY    |
| F9  | POOTUCK         | NEW FIELDS   |
| F10 | WALCUTTS        | BEACON FALLS |
| F11 | LOCKPORTSET     | CHESTER      |
| F12 | WESPOWASC       | PORTLAND     |
| F13 | SALMON RIVER    | E SHAFFRANT  |
| F14 | HEAVY           | E LSTE       |
| F15 | PATCHING        | WINDHAM      |
| F16 | QUICK           | THOMPSON     |
| F17 | RIFWICK         | UNION        |
| F18 | WATERBURY       | EASTPORT     |
| F19 | WINDHAM         | TOLLAND      |
| F20 | SHREVE          | SOMERS       |

**STATE LEASED & OWNED SHOOTING GROUNDS**

- | LET. | LOCATION               |
|------|------------------------|
| A    | FARMINGTON             |
| B    | CROWMELL MEADOWS       |
| C    | DURHAM MEADOWS         |
| D    | EAST LYME              |
| E    | GREAT ISLAND           |
| F    | LODGE COVE             |
| G    | ELINGTON JONES YEARM   |
| H    | TAUNTON HILL           |
| J    | WINDHAM NEWTON SHILLON |



**LEGEND**

STATE FORESTS OPEN TO HUNTING	
STATE REGULATED AREAS	
SANCTUARY AREAS	
NEW REGULATED AREAS	
ROUTE NUMBERS	

**MAP OF CONNECTICUT**  
SHOWING  
**AREAS OPEN TO HUNTING**  
UNDER REGULATIONS OF  
STATE BOARD OF FISHERIES AND GAME

sportsmen's association. The number of daily permits which may be issued on a State-regulated shooting area is set by agreement between the department and the group sponsoring the area. The number of permits issued daily depends upon the size of the area, the hunting pressure, and the amount of game present. Statistics for the 1939 season show, as might be expected, that the heaviest use of these regulated areas is on Fridays and Saturdays, and the lightest use on Tuesdays and Wednesdays.

Table I gives briefly some facts pertaining to the regulated shooting program during 1939.

Table II summarizes the number of permits returned and the game reported killed for each regulated shooting area for the 1939 season.

The acreage of State-owned, State-leased, and State-regulated lands now open to public shooting totals approximately 269,000 acres as against 175,000 acres in 1935. On the basis of thirty-thousand hunters this acreage gives an average of 8.9 acres per gun as against 5.8 per gun in 1935.

TABLE I

## STATE-REGULATED SHOOTING PLAN DURING 1939

Number of Regulated Areas—21.	Max.	Min.	Average
Size of individual regulated area.....	18004	1198	5529
Number of permits returned per area.....	658	18	198
Number of pheasants taken per area.....	279	0	57
Number of grouse taken per area.....	233	—	30
Number of rabbits taken per area.....	372	17	135
Number of woodcock taken per area.....	97	1	19
Pieces of game taken per area.....	928	46	284

See Table II on next page.

## Pheasants

During the biennium a state wide pheasant range survey was conducted by the Game Division with the cooperation of the warden service and the local sportsmen in each area. The immediate result of this survey has been the revision of the pheasant liberation program. This revision has been more in the field of liberation location than in total numbers or sex ratio. The previous liberation plan of equal numbers of pheasants to each county has been altered to allow for two important factors—those of hunting pressure and suitability of pheasant range. In a number of towns where the cover is predominately woodland and better suited for grouse, pheasant stocking has been discontinued. In some suburban towns where the available pheasant ranges were small, unconnected and

REPORT ON REGULATED SHOOTING AREAS—SEASON OF 1939

Summary of Permits Returned and Game Reported Taken

TABLE II

AREA	Permit Stubs Returned	Permits Returned			Pheasants	Grouse	Woodcock	Ducks	Geese	Snipe	Squirrels	Rabbits and Hares	Snowshoe Rabbits	Raccoon	Muskrats	Mink	Skunks	Weasel	Fox
		Season	Daily	Total															
Naugatuck.....	—	7	11	18	13	4	3	—	—	—	—	26	—	—	—	—	—	—	—
Durham Farmers.....	161	23	64	87	2	—	6	—	—	—	2	70	—	—	—	—	—	—	—
Durham Rod & Gun.....	—	55	98	153	80	12	15	20	—	—	21	330	—	—	—	—	—	—	1
Meriden.....	130	18	77	95	12	3	9	2	—	—	—	43	—	—	—	—	—	—	—
Portland.....	116	3	120	123	7	5	6	5	—	—	16	54	—	—	—	—	9	—	6
Sprague.....	184	9	177	186	28	26	18	10	—	—	13	73	—	—	—	—	—	—	—
Housatonic Valley.....	357	1	357	358	6	42	3	—	—	—	71	198	—	9	—	—	—	—	1
Westbrook.....	67	23	32	55	11	6	53	3	—	—	—	17	—	—	—	—	—	—	1
East Hartford.....	161	69	96	155	163	42	18	28	—	—	—	184	—	—	—	—	—	—	1
Watertown.....	—	31	63	94	51	20	16	2	—	—	—	158	—	—	—	—	—	—	2
South Windsor.....	675	70	423	493	279	45	20	93	—	3	74	252	—	—	—	—	—	—	6
Torrington.....	610	65	593	658	60	60	30	—	—	—	29	372	12	—	—	—	—	—	2
Winchester.....	132	—	126	126	—	8	4	1	—	—	2	43	—	—	—	—	—	—	—
Blackwells.....	316	—	307	307	30	5	5	5	—	—	16	47	—	—	—	—	—	—	3
Hftd. Co. Farmers.....	122	23	36	59	23	5	1	—	7	—	—	25	—	—	—	—	—	—	1
Wallingford.....	173	11	91	102	10	2	23	1	—	—	1	59	—	—	—	—	—	—	—
Woodbury.....	—	140	131	271	146	233	97	37	—	—	82	306	—	—	9	1	—	—	17
Lebanon-Franklin.....	276	29	242	271	100	21	15	6	—	—	14	59	—	1	30	—	71	1	10
Goshen Hill.....	288	21	271	292	104	68	23	—	—	—	28	202	—	—	17	2	10	—	14
East Windsor.....	106	90	1	91	56	19	13	27	—	—	21	284	—	—	—	—	—	—	4
Mohegan.....	130	38	126	164	27	15	22	9	—	—	3	30	—	—	—	—	—	—	—
Total.....	4004	726	3442	4168	1208	641	400	249	7	3	393	2832	12	10	56	3	90	1	69

often closed to public hunting, pheasant stocking has been abandoned. The numbers of pheasants saved by eliminating liberations in these unproductive areas have been added to the quotas of towns of high soil productivity where pheasant range elements are of a higher quality. In the unproductive pheasant ranges where the hunting load is heavy, stocking will be continued on a "put and take" basis. This change in the pheasant stocking policy has further justification as a result of the findings of Professor A. E. Moss, Forestry and Wildlife Department at the University of Connecticut. Professor Moss made an analysis of the hunters' success as reported on license stub returns over a ten-year period as related to agricultural land use.<sup>1</sup> His findings "indicate clearly that the pheasant is dependent upon agriculture for its food supply and that the pheasant harvest is directly related to soil productivity."

In the 1938-40 biennium approximately 16,640 pheasant eggs were purchased from local game breeders and allocated to interested persons and clubs under the following regulations:

1. To follow instructions which are provided for hatching eggs and the rearing of young.
2. To liberate all birds on lands which are not posted against shooting by October 10th.
3. To report to the department the number of birds hatched, reared and liberated before November 1st.

The following summarizes the cooperative pheasant rearing program for the years 1938 and 1939:

	1938	1939
Total number of eggs distributed.....	*8,511	8,129
Total cost of eggs purchased.....	\$1,025.00	\$950.00
Number of cooperative breeders receiving eggs.....	312	215
Number replying to questionnaire.....	312	215
Number of eggs reported hatched.....	2,818	3,434
Number of birds reported liberated.....	1,555	2,064
Cost of birds liberated based on total cost of eggs.....	\$.66	\$.46

\*Includes 211 eggs given to department by pheasant breeders.

(1) Journal of Wildlife Management, Vol. 3, No. 3, July, 1939.

The following table gives the pheasant liberation by Warden Service Districts for the biennium 1938-40

PHEASANT LIBERATION  
BY WARDEN SERVICE DISTRICT

1938—1940

District	Fall 1938			Spring 1939			Fall 1939			Spring 1940			Grand Total		
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Totals	Cocks	Hens	Total	Cocks	Hens	Total
No. 1 Litchfield . . .	753	83	836	318	766	1084	788	99	887	295	942	1237	2154	1890	4044
No. 2 Hartford . . .	802	152	954	272	741	1013	691	95	786	276	973	1249	2041	1961	4002
No. 3 New Haven . . .	861	152	1013	290	887	1177	1038	221	1259	355	1077	1432	2544	2337	4881
No. 4 Fairfield . . .	985	141	1126	266	755	1021	1174	68	1242	335	997	1332	2760	1961	4721
No. 5 Tolland . . . .	875	279	1154	248	878	1126	1152	248	1400	353	1206	1559	2628	2611	5239
No. 6 Windham . . .	768	155	923	160	577	737	769	262	1031	164	586	750	1861	1580	3441
No. 7 New London . .	612	35	647	148	424	572	426	58	484	176	540	716	1362	1057	2419
No. 8 Middlesex . .	547	31	578	112	412	524	476	119	595	94	341	435	1229	903	2132
	6203	1028	7231	1814	5440	7254	6514	1170	7684	2048	6662	8710	16579	14300	30879
Died in Transit			8			11			19			33			71
			<u>7239</u>			<u>7265</u>			<u>7703</u>			<u>8743</u>			<u>30950</u>

NOTE: A liberation of 6712 pheasants—1645 cocks and 5067 hens—in the spring of 1937 has not been previously reported.

## Quail

The stocking policy of this game bird has been changed during the biennium. All liberations of northern seal banded quail have been restricted to New London, Middlesex and New Haven counties, especially the lower third of these counties bordering Long Island Sound. It is in this area that liberated quail have been observed to survive and reproduce.

In 1932 the department embarked on a campaign of liberating only hardy, northern quail stock originating from Wisconsin and Massachusetts. The theory behind this plan was that this strain of northern quail would be better able to withstand our winter conditions. During the succeeding six years this strain of quail was liberated throughout the state with relatively poor results.

The failure to establish this game bird throughout the state is now thought to be due to the fact that during the past twenty years the acreage of small grains produced on Connecticut farms has dropped from one acre per farm in 1920 to .08 (eight hundredths) of an acre per farm in 1935. The fact that ice storms are rare and the snow-falls light in the towns bordering Long Island Sound is the apparent reason for continued survival of quail in that locality.

The following table gives the quail liberation, cost and kill figures for the period 1932-1940:

Year	Season	Kill	Quail Stocked	Cost
1932	Open	—	Spring 268	\$1,072.00
1933	Open	5,911	Spring 605	2,420.00
1934	Open	1,196	Spring 442	1,547.00
1935	Open	2,298	Spring 353	1,324.00
1936	Open	814	Spring 590	2,212.50
1937	Close	—	Spring 870	3,045.00
1938	Close	—	Spring 1006	3,127.00
1939	Close	—	Spring 652	1,947.30
Total		10,219	*4786	*\$16,694.80

## Grouse

The abundance of grouse during the biennium seems to be quite variable. Reports from sportsmen and game wardens indicate that there are areas of normal abundance and others of general scarcity. More emphasis is to be placed on the management of the game bird during the next biennium. The major portion of the Pittman-Robertson program in

\*Stocking figures do not include birds lost in process of liberation. Cost figure represent total birds purchased.

this state is to investigate forest management practices which will increase the grouse-carrying capacity of our State forests. The more intensive grouse investigational work at the Litchfield-Morris Sanctuary in Litchfield should provide valuable information on the life habits of this bird.

### Waterfowl

According to government officials, the waterfowl population has increased for five consecutive years. The federal regulations for hunting these birds have continued to be of a restrictive nature and the well-founded policy is still to keep the kill below the annual production until the carrying capacity of the wintering grounds has been reached.

The restoration work in Canadian waterfowl breeding grounds by Ducks Unlimited and the federal government's breeding ground and refuge system in this country have done a great deal to increase the waterfowl populations.

Within the past three years the Warden Service in its annual waterfowl census has noted a decided increase in our native waterfowl population. A number of Connecticut's older duck hunting clubs have reported an increase in the total season's bag during 1938 and 1939 over past years.

In 1940 the waterfowl season and regulations were changed somewhat to correspond with the increase in number of waterfowl. The open season for 1939 was October 23 to December 5, inclusive. In 1940 this was increased to a sixty-day season, October 16 to December 14. The bag limits for both seasons remained the same. However, in 1940 the legal limit could be possessed for twenty days after the close of the season instead of ten days as allowed in 1939. In 1940 the federal regulations permitted hunting from sunrise to 4:00 P.M. as compared to 7:00 A.M. to 4:00 P.M. during 1939. Regulations prohibiting the use of live decoys or baited waters were still in effect during the biennium.

### Woodcock

The majority of reports from Connecticut hunters would indicate that the woodcock kill during the biennium has increased slightly over previous years. However, an exceptional cold spell during the winter of 1940 is said by government officials to have killed up to forty per cent of these birds in their wintering grounds in the Gulf States. If this is true, Connecticut hunters must expect fewer woodcock during the next few years.

During the past three years investigations in Maine and Pennsylvania have been undertaken to determine the details of this bird's life history, seasonal movements and migration routes. A number of woodcock have been banded by these investigators and Connecticut woodcock hunters should report any banded woodcock.

### Raccoon

The State-owned raccoon colony at Shade Swamp Sanctuary, Farmington, was moved to the University of Connecticut, Storrs, during this biennium. This change of location was necessitated because of the discontinuance of the animal exhibit at the Shade Swamp Sanctuary. The Forestry and Wildlife Department at the University is caring for these animals at no cost to the department, except for the food item. Selective breeding experiments are being carried on with approximately fifty breeders. The excess breeders and young animals are being liberated on State Forests and raccoon sanctuaries about the state.

Eighty-five raccoon were released during the fall of 1938 and thirty excess breeders, some of which were bred females, were released in the spring of 1940. A number of these animals have been ear-tagged to determine their movements and the ability of these pen-raised animals to survive.

A cooperative raccoon propagation program with raccoon clubs was started in 1940. This program, which is similar to a successful Wisconsin project, offers a contribution for the production and release of raccoon to those clubs which will properly equip themselves for such propagation work.

### Cottontail Rabbits

Cottontail rabbits have been increasing rapidly during the biennium and it is felt with some certainty that the peak of the cycle will occur sometime in 1941. The low point of the cycle was experienced during the biennium 1934-36. A fatality in Connecticut from the infectious disease tularemia associated with the cottontail rabbits and other small rodents has not been reported during or prior to this biennium. Connecticut is one of the few states in the country which has not experienced a fatality from this disease and, for this reason, it has been the policy of the Board to prohibit the introduction of cottontail rabbits from other states for restocking purposes.

### Snowshoe Rabbits

Connecticut is fortunate in having in the northeastern and northwestern parts of the state a portion of the natural range of the snowshoe rabbit. During January and February, 1940, 148 wild-trapped snowshoe rabbits were purchased from dealers in New Brunswick, Canada, and released in the following towns: Barkhamsted, Bolton, Goshen, Hartland, Litchfield, Stafford, Tolland and Torrington. We have been assured by the Canadian Department of Agriculture officials that tularemia has

never been encountered in eastern Canada where these rabbits were procured. A majority of the rabbits released have been ear-tagged to determine their movements and ability to survive Connecticut conditions. Connecticut sportsmen's clubs intending to purchase snowshoe rabbits for liberation purposes should be sure that the area to be stocked is within the range of this animal as other liberations are likely to be failures.

### Furbearers

Facts concerning the fur resources of Connecticut are meager. A computation based upon trapping license stub returns, a report always difficult to obtain, and current fur prices in 1937 indicate the total income from furs to Connecticut trappers approaches \$100,000 annually.

The following table, compiled from trapping license stub returns, would seem to indicate the muskrat population, which is considered cyclic, to be on the decline and the mink population, which is dependent to a certain extent upon the muskrat for food, to have decreased accordingly.

The State Board of Fisheries and Game controls the trapping in State forests, State parks and numerous other State-owned lands. Only State-authorized trappers are allowed to trap on these lands, and the numbers of animals taken are often limited to insure adequate breeding stock for future years.

### FUR ANIMALS TAKEN IN CONNECTICUT AS REPORTED FROM LICENSE STUB RETURNS

Species	1931	1932	1933	1934	1935	1936	1937
Bobcat.....	44	40	61	48	40	47	63
Canada Lynx..	1	3	—	—	—	1	—
Fisher.....	12	22	4	18	—	—	—
Fox.....	2,177	2,426	3,359	3,895	3,703	4,216	3,958
Mink.....	460	392	722	896	1,118	1,043	634
Muskrat.....	12,398	12,330	20,300	24,054	25,940	17,539	12,233
Otter.....	91	106	72	36	38	21	—
Raccoon.....	3,014	2,674	3,885	3,745	4,179	4,055	2,692
Skunk.....	4,582	3,753	5,283	5,886	5,610	6,776	5,082
Weasel.....	869	601	1,077	747	933	989	497

Percentage of hunters and trappers reporting:

63.7%	60.2%	70%	70.2%	61.1%	57.4%	44.4%
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## Deer

The deer herd in Connecticut has long been a subject of legislative attention. G. G. Goodwin outlines the history of the deer in his "Mammals of Connecticut."<sup>1</sup>

In 1642 the General Court of Connecticut forbade the purchase of venison from the Indians, and again in 1677 the transport of deer hides was restricted. By 1698 protection of deer was general in the southern New England States. Although given some protection in the eighteenth and nineteenth centuries, the scarcity of deer was such that the occasional records of kills in the eighteen hundreds were thought remarkable.

In 1893 the legislature passed a law giving complete protection to the deer for ten years. This provoked some amusement since the species was thought to be virtually extinct. The close season was extended to 1911 and again to 1915, when the law was modified to permit landowners to kill deer damaging crops.

Since that time the policy of deer management has been based on the principle that the landowner should control the taking of deer on his property in order to hold agricultural damage from deer at a minimum.

The present law provides for the issuance of permits to shoot deer to owners or lessees of land used for agricultural purposes, their families and regular farm employees.

No deer may be taken without permits. The permits are issued by the department on the application of the landowner or lessee of agricultural property. No hunting license is required for the resident owner or lessee or for the lineal descendants of such owner or lessee; a license is required of other permittees.

During the year 1939 permits were issued by the department to all those named in the application of the landowner. Under this system 2,224 permits were issued. This increase in the number of permittees increased the legal kill by 352 in 1939.

In December, 1939 an opinion from the Attorney General showed the department's policy to be in error, and following that date permits were restricted to the landowners and lessees, their lineal descendants and regular employees. This change in policy restricted the number of permits.

Connecticut's deer herd has been estimated at eight thousand animals, based on wardens' reports and those received from the United States Fish and Wildlife Service. Further increase in the size of the herd is not deemed advisable since the suitable range is largely occupied and further increase would probably result in increased damage to agricultural crops and increased highway hazard.

(1) Connecticut Geological and Natural History Survey, 1935.

## REPORT OF DEER KILLED

## Cause of Death

Jan. 1st to Dec. 31st, 1938

District	Accidents	Trains	Dogs	Autos	Destroying Property	Found Injured	Cause Unknown	Killed Illegally	Totals
Litchfield Area.....	1	3	7	24	50	9	1	20	115
Hartford Area.....	—	—	1	10	2	1	1	3	18
New Haven Area.....	2	—	—	13	8	1	2	5	31
Fairfield Area.....	3	2	1	15	6	3	3	14	47
Tolland Area.....	1	—	3	9	14	—	4	1	32
Windham Area.....	2	2	—	17	40	5	4	9	79
New London Area.....	1	1	—	8	17	2	—	2	31
Middlesex Area.....	1	1	1	15	17	—	3	7	45
Totals.....	11	9	13	111	154	21	18	61	398

Jan. 1st to Dec. 31st, 1939

District	Accident	Trains	Dogs	Autos	Destroying Property*	Found Injured	Cause Unknown	Killed Illegally	Totals
Litchfield Area.....	2	3	8	26	143	7	4	22	215
Hartford Area.....	1	—	—	4	7	2	—	2	16
New Haven Area.....	4	—	2	16	38	2	3	16	81
Fairfield Area.....	2	3	—	31	13	6	1	6	62
Tolland Area.....	—	3	2	5	45	—	—	4	59
Windham Area.....	1	—	2	15	70	1	9	22	120
New London Area.....	3	—	—	7	27	2	2	2	43
Middlesex Area.....	1	—	2	10	39	4	5	6	67
Totals.....	14	9	16	114	382	24	24	80	663

\*352 killed under new permit system

There were 111 deer killed by cars in 1938 and 114 in 1939. Fortunately no fatalities have resulted from this cause but damage to cars ranges from \$5.00 to \$250 in each collision. The law provides that deer so killed become the property of the owner of the car.

### Predator Control

Our knowledge of what constitutes a definite predator problem in Connecticut is still imperfect. Any species before becoming outlawed as a predator must be considered first for its value to the agriculturists, game managers and sportsmen, students of natural history and the fur industry. Until investigations prove otherwise, the department is practising, through its warden service and authorized trappers on State lands, only moderate control of such animals as weasels, great horned owls, sharp-shinned hawks, Cooper's hawks and goshawks.

The following numbers and species of animals were taken by the warden service during the period July, 1938 to June 30, 1940 in an attempt to maintain a balance of nature on State-owned, State-leased and State regulated shooting grounds and sanctuaries.

House cat.....	817
Weasel.....	31
Hawks (Accipiter & Astus).....	98
Owls (Bubo).....	13
Crows .....	774
Bobcat.....	1
Foxes.....	35
*Snapping Turtles.....	2,906 (36,555 lbs.)

\*An investigation of the food habits of this reptile is being made at the University of Connecticut to determine its predator significance.

### Pittman-Robertson Program

On September 2, 1937, the President approved the Pittman-Robertson Act, also known as the Federal Aid to Wildlife Restoration Act. (50 Stat. 917; 16 U. S. C. 699-699j) This act culminated the efforts of conservation organizations throughout the country for a cooperative Federal-State program.

Under the law the Secretary of the Interior was authorized to cooperate with the states, through their respective fish and game departments, in wildlife restoration projects. No state can participate until it shall have laws to prohibit the use of hunting license fees for any but fish and game department purposes and which assent specifically to the provisions of the Pittman-Robertson Act.

Hunting license money in Connecticut was already ear-marked for use of the State Board of Fisheries and Game and on June 1, 1938 the Governor assented, as provided in the act, to the provisions of the Pittman-Robertson Act pending legislative approval. At the next session of the legislature Section 1078e of the 1939 Supplement to the General Statutes of the State of Connecticut, being an act of "Assent to act of congress concerning wildlife restoration," was passed. This statute authorized and

directed the State Board of Fisheries and Game to perform such acts as necessary to the establishment and operation of cooperative wildlife restoration projects in compliance with said act and with rules and regulations of the Secretary of the Interior thereunder.

Provisions of the Pittman-Robertson Act and regulations of the Secretary of the Interior cover such items as: the source of funds, method of apportionment to states, period of availability, disposition of unexpended funds, financial participation by the states, financing of projects by the states, reimbursement to the states, types of projects, forms for submitting projects for approval, maintenance of projects, ownership and administration of lands, structures and equipment purchased, and employment of competent personnel.

The act was originally administered by the Secretary of Agriculture through the Biological Survey but since the governmental reorganization of 1940 it has been administered by the Secretary of the Interior through the Fish and Wildlife Service.

Funds for carrying out the Act are appropriated annually by Congress from the tax on sporting arms and ammunition. Federal allotments to Connecticut have been as follows:

1938-1939.....	\$2,499.22
1939-1940.....	3,931.37
1940-1941.....	5,853.34

These funds are available for two years, after which they revert to the Federal Fish and Wildlife Service unless projects have been approved which will obligate them during the third year.

The State must bear the cost of approved projects upon completion or from time to time as work progresses. The State is reimbursed from the Federal funds listed above for seventy-five per cent of the project costs. In other words, Connecticut spends twenty-five cents for every seventy-five cents spent by the Federal government.

Two general classes of projects are provided for under the Act: **First**, investigations and surveys that will furnish basic information for successful wildlife management; **second**, development of areas to increase their suitability as wildlife habitats. Under this class comes the purchase of land necessary to rehabilitation of wildlife. All projects must be on publicly-owned land or such as to provide benefits of a general nature.

Ownership of lands, buildings and equipment purchased rests with the State as does maintenance of completed projects.

The State must provide adequate personnel, selected on a basis of competency, to carry projects to satisfactory completion.

The first project submitted for Connecticut was approved December 8, 1939 and completed June 30, 1940. This was a development

project on the Scoville Sanctuary, a tract of about thirty acres, given to the State in 1937 and so located as to act satisfactorily as a seed stock refuge for part of the Watertown Regulated' Shooting Area. Development consisted of fencing to exclude livestock, and plantings and thinnings for winter cover and game food.

The second project submitted was approved December 14, 1940, and is of an investigational nature. It is intended—

**First**, to study ruffed grouse and other wildlife on three thousand acres of representative forest land on **three State Forests**.

**Second**, to make changes for the benefit of wildlife on half of the area, using the other half to check the results.

**Third**, on the basis of these results to recommend changes in existing forestry practices and the establishment, in the course of regular forestry work, of conditions beneficial to wildlife. This material will be written into existing forest work plans for execution by forestry personnel on all State Forests.

It is expected that with sufficient investigational work as a basis the changes instituted will result in an increase in game on State Forests under present or expected hunting pressure.

A third project has been submitted for approval in which the mortality in spring and fall stocked pheasants will be observed and the effectiveness of the two classes of birds as breeding stock determined. Results of this work will be made the basis of stocking policy in the state.

It is expected that the majority of Pittman-Robertson projects in the future will be of an investigational rather than a developmental nature. This is arrived at by consideration of such factors as the amount of money expected, the need of publicly-owned land, problems and costs of maintenance of development projects and the problems of wildlife management under Connecticut conditions. The knowledge which can be obtained through such projects should increase the effectiveness of present departmental activities. When the necessary factors for increasing wildlife, under given conditions, have been demonstrated, dependence will be placed on private initiative, other public agencies and existing departmental facilities to furnish these necessities.

### **Private Shooting Preserves Under State Regulation**

Private fish and game clubs and individually owned private areas closed to hunting have long been in existence in Connecticut. On many of these areas little, if anything, had ever been done to materially improve

the hunting conditions or to increase the game supply. Many of the private fish and game clubs and the individuals controlling lands were willing and able to carry out game management practices on the land under their control if a reasonable incentive were provided. It was believed that the intensive development and stocking of these private areas with pheasants would prove beneficial to the sportsmen by providing an overflow of birds which would help to restock surrounding covers open to public shooting. The records of Private Shooting Preserves in Connecticut tend to confirm this belief.

The State Board of Fisheries and Game, in 1933, inaugurated a program for the establishment, under regulations, of areas known as "private shooting preserves." The regulations which govern the Private Shooting Preserves were drawn up so that they would first, protect the public interest; second, benefit public shooting; third, encourage the propagation and liberation of more game birds in Connecticut; and fourth, provide a method by which individuals or clubs could obtain good pheasant shooting on highly developed private areas with a reasonable chance of a fair return in relation to the time and money expended.

A summary of Private Shooting Preserve regulations may be obtained from the office of the State Board of Fisheries and Game. Briefly, the important regulations are as follows:

The area must not be less than five hundred acres or more than one thousand acres, must be suitable for the purpose and must not conflict with any reasonable prior public interest. There shall not be more than five thousand acres devoted to private shooting preserves under State regulation in any one county.

The regular open season for pheasants must be observed if birds are liberated at the rate of one bird to each four acres in the preserve. If birds are liberated on the preserve at the rate of one bird per acre, shooting is permitted from October 1 to February 28, inclusive. The kill is limited to seventy per cent of the number of pheasants liberated with no restriction on sex or daily bag limit. All birds shot on the preserve must be tagged with sealed, numbered metal tags supplied by the State Board of Fisheries and Game at a cost of ten cents per tag, and there is an annual rental charge of ten dollars for a tag-sealing device.

From 1933, when the preserves were first established under regulation of the State Board of Fisheries and Game, up to the 1939-1940 season, twenty-four different areas have been in operation. During this time, five of them have discontinued operations.

From 1933 up to and including the 1939-40 season a total of 43,298 pheasants purchased by the preserve owners have been released on the private preserves and a total of 17,546 birds, or only 40.5% of the birds released, have been shot on the preserves. This leaves 25,752 pheasants

that were released on the preserves unaccounted for, and it seems reasonable to believe that many, if not the greatest proportion, of these birds can be accounted for by the fact that the birds drift away from the preserve and help to restock surrounding covers.

### SUMMARY OF RECORDS ON PRIVATE SHOOTING PRESERVES UNDER STATE REGULATION

Season	Number of Preserves Operating	Total Acreage	Total Liberation	Total Kill	% of Kill
*1933-34.....	5	2,522	768	169	22.0
1934-35.....	9	4,522	3,918	1,252	31.9
1935-36.....	13	6,770	6,779	2,506	36.9
1936-37.....	14	8,046	7,576	2,868	37.9
1937-38.....	17	9,986	8,034	3,433	42.7
1938-39.....	15	9,040	7,491	3,086	41.2
**1939-40.....	17	10,164	8,732	4,232	48.5
			43,298	17,546	40.5

\*Some preserves were established later in the season and the liberation and kill records are not complete for this season.

\*\*One preserve in operation this season discontinued operations and it was impossible to obtain liberation and kill records for this area.

### Sanctuary or Refuge Problem

In principle, sanctuaries or refuges are areas closed to hunting in order that natural conditions may be preserved undisturbed and that the excess game populations which they may produce may move out and restock surrounding areas. Pheasants, deer, waterfowl and turkey respond most readily to a refuge system. Cyclic species such as grouse and rabbits only lengthen the peak of the cycle in the vicinity of the sanctuary.

Connecticut's sanctuary system is composed primarily of waterfowl sanctuaries and forest game sanctuaries. The majority of the present waterfowl sanctuaries have resulted from the 1932-34 program when the waterfowl population was at a low point and every effort was being made to increase their numbers. A large percentage of these sanctuaries were small nesting areas, the remainder being for resting and feeding. The cost of patrol and posting of these waterfowl sanctuaries has been high. Consequently, with the increase in the waterfowl population only the larger and more productive breeding grounds and strategically located resting and feeding areas are being retained.

The present upland game sanctuary areas are for the most part department-posted private properties of one hundred acres or more in woodlands where grouse, deer, squirrels and other forest wildlife species predominate. The value of such sanctuaries is questionable in the light of the statements above and the fact that Connecticut deer population is maintained by a closed season. The numbers of these sanctuaries are being curtailed.

Future sanctuary plans lie within State-leased and State-regulated shooting areas where the pheasant is the principal species involved. These closed areas will take the form of small refuges where fall and winter cover is present and a winter feeding station can be maintained.

### Litchfield-Morris Sanctuary

The General Assembly of 1923 empowered the State Board of Fisheries and Game to accept and administer a permanent sanctuary for wildlife on land in the towns of Litchfield and Morris.

This sanctuary, which is known as the Litchfield-Morris Sanctuary, is maintained from the income of two funds: the White Memorial Foundation Fund and the John Jay White, Jr. Memorial Fund, provided through the generosity of Alain C. White and Miss May W. White.

The sanctuary program during the first fifteen years (1923-1938) consisted primarily of the artificial propagation of wood duck and pheasants for release within the sanctuary. Due to the steady increase in numbers of wood duck throughout New England in the past few years, the need of artificially propagating wood duck has diminished to the extent that this program has been discontinued.

The pheasant propagation work has been abandoned because the sanctuary property is almost entirely woodland and not well adapted to pheasants.

The program at the Litchfield-Morris Sanctuary is now primarily an investigation into forest management practices best adapted to the increase of grouse.

The work plan involves population studies on check and development areas, fauna and flora inventories, intensive grouse life history observations and recommendations to those carrying on forest management activities on the area.

The results of these studies will be available in published form and it is planned that this area will serve as a demonstration to professional foresters, forestry and wildlife students and others who are interested in the increase of grouse on private and public lands.

### Shade Swamp Sanctuary

The animal exhibition and game propagation program at Shade Swamp Sanctuary in Farmington has been discontinued during the biennium as an economy measure. The exhibition pens and buildings are being maintained until such time as this sanctuary may again be opened to the public. The marsh land composing a part of this sanctuary, used intensively by ducks during the winter and breeding season, is managed for waterfowl and muskrats.

### Federal Leased Lands

Assekongk Swamp in North Stonington and Holbrook Pond in Hebron have been leased by the federal government to the department for ninety-nine years. These lands were acquired and developed by the United States Resettlement Administration during 1935-37.

Assekongk Swamp consists of six hundred acres of woodland, approximately 350 acres of which have been flooded to create a waterfowl breeding area. The entire area is open to hunting under regulation of state and federal game laws. Funds to apply toward the management activities will be forthcoming from pasture rentals.

Holbrook Pond area consists of a seventy-three acre pond and 132 adjoining acres of woodland. The pond was stocked in 1937 with bullheads, yellow perch, shiners and pickerel. The pond will be open to fishing under regulation in 1941. Native waterfowl have for many years concentrated here during the fall months, providing some duck hunting. The area will be open to duck and upland hunting during the fall of 1940.

### Cooperative Grain Planting Program

In an attempt to increase the carrying capacity of certain pheasant covers, the department has provided a program whereby sportsmen's clubs may receive pheasant stocking as a credit for planting of grain patches.

This program was started in 1938 and has progressed in the following manner:

Year	Sportsmen's Clubs Participating	Other Individuals Participating	Total Acreage	Pheasant Credit
1938.....	2		5	32
1939.....	11	6	52 $\frac{3}{4}$	343
1940.....	19	9	91 $\frac{1}{4}$	280*

\*Not all credit tabulated.

The following seeds have been used in the planting of these grain patches: Cayuga Soybean, Tatarian Buckwheat, Common Buckwheat, Pearl Millet, Hungarian Millet, Proso, Milo Maize, Red Sumac, Sorghum, Broom Corn, Kaffir Corn, Golden Bantam and Sunflower.



Long periods of deep snow and ice or sleet storms make winter feeding of game birds necessary in Connecticut.



It has been observed that only those grain patches that have been heavily fertilized are successful. Sportsmen's clubs and landowners may receive grain and planting instructions if they make their requests known to the Hartford office prior to March 1st each year.

### Winter Feeding Program

One of the game management activities of the Game Division is furnishing grain to the warden service for the winter feeding program. Approximately twenty tons of whole corn and scratch feed were purchased during the biennium for this purpose. Strategically located and weekly-visited feeding stations are of great importance in wintering over adequate breeding stock in an area. The Windham County 4-H Conservation Club, a group of some fifty boys of high school age, has cooperated with the department during the winter of 1939 and 1940 to the extent of each member's building and maintaining a feeding station in his community.

The Board welcomes every opportunity of cooperation and aid to groups of young people interested in conservation.

### Game Breeding Industry

Section 3157, Chapter 186, of the General Statutes of Connecticut provides that the Board, upon written application and the payment of a fee of two dollars, may license any person to breed, propagate and sell game birds or quadrupeds propagated by the holder of such license.

The number of pheasant breeders licensed has decreased slowly during the past few years. One hundred and ninety-one game breeders offering pheasants for sale were licensed in 1939 and one hundred and eighty-three were licensed in 1940. In the spring of 1940 when the State Supervisor of Purchases opened sealed bids from game breeders offering pheasants for sale to this department, twenty-nine breeders offered 50,464 pheasants at a total cost of \$106,234. The prices ranged from \$1.35 to \$2.00 for cock birds offered for sale in late August to \$1.75 to \$3.00 for cocks and hens in April. Although there is some market for pheasant meat, and private shooting preserves take from five to ten thousand birds annually, potential pheasant production is away above the present demand. Further development of the table use of this bird would be a profitable venture for the breeders and would tend to expand production. The breeders of seal banded quail are much nearer the level of supply and demand. The department gathers no figures on the volume of production of fur breeders. In 1939, 165 fur breeders, raising mostly mink, were licensed. During 1940, 161 fur breeders were licensed.

### Field Trials

Hunting dog field trials continue to be popular with Connecticut sportsmen and dog fanciers. The Board for a number of years has offered every possible encouragement to the field trial sport, especially to the bird dog trials. During the fiscal year 1939-40 the department cooperated on a fifty-fifty basis with thirteen bird dog field trial associations to the extent of furnishing \$925 worth of pheasants.

In many cases the pheasants used for these trials helped to restock surrounding covers. However, the increasing numbers and varied locations of these trials has made it necessary for the department to limit its cooperation to only those field trial associations who are willing to hold trials on department-regulated shooting areas.

During the calendar year of 1938 the department issued permits for sixty-seven field trials—twenty-five of these bird dog trials, twenty-four coon dog trials, two fox dog trials, fifteen combination coon and fox dog trials, and one beagle trial. In 1939 seventy-seven permits were issued for the following field trials: thirty-six bird dog trials, nineteen coon dog trials, eighteen coon and fox trials, two fox dog trials and two beagle trials.

### Hurricane

The hurricane of the fall of 1938 has without doubt improved food and cover conditions for forest game species. The many openings made in the forest canopy as a result of the uprooted trees have increased the amount and varieties of plant growth available to deer, grouse and rabbits many fold. The mast-bearing trees (oak and hickory) which withstood the wind best and lost competing trees will now be heavy producers of mast. Trees that have fallen into streams have created deep holes and "hides." Upturned trees have provided dusting points and year around sources of grit. Down timber in profusion has made some areas inaccessible to man and difficult for hunting dogs to work through. Those who have studied the effect of the hurricane on food and cover conditions of forest game have noted that similar effects might be produced artificially to improve conditions in a given forest area.

### Members of Division of Game Restoration

Arroll L. Lamson, Game Management Supervisor

James S. Bishop, Assistant Game Management Supervisor

Leslie A. Williamson, Statistical Clerk



Boy Scouts, 4-H Clubs and C.C.C. Camps render valuable assistance in the winter feeding program of the State Board. Fish and Game Clubs and other interested organizations can help by contributing grain to be distributed by these boys.



## Division of Fish Restoration

### Trout

#### \*State-regulated Trout Streams

When the system of leasing trout streams was inaugurated in 1925 considerable time and money was expended in the program over a relatively short period of time. As a result, all or part of the larger and more important trout streams were soon brought under the control of the department through term leases thus providing for public fishing in many trout streams well distributed throughout the state. The cost of maintaining leases on the areas now under control is considerable and this is the most important factor limiting expansion of the program. The total mileage of streams now under regulation by the department is approximately 150 miles but this figure varies somewhat from year to year as new streams or sections of streams are added and others given up for various reasons. Some increase in mileage is made occasionally through land purchases of the State Forestry Department and through cooperative agreements between the property owners and the State Board of Fisheries and Game. The cooperative regulated program substitutes better protection of the rights of property owners for cash compensation.

The following State-controlled streams and sections of streams are open to public fishing and are so listed in the fishing pamphlet which is distributed each year just prior to the opening of the fishing season. There are numerous other streams which are State-controlled by reason of being within State forests or within the boundaries of cooperative regulated shooting areas which are not listed because of their small size.

#### Important Regulated Streams:

**Aspetuck River, East Branch**, intermittent stretches below Route 25 at New Preston.

**Bantam River Outlet**, from Lower Bantam to about  $\frac{1}{4}$  mile below second bridge in town of Morris.

**Bigelow Brook**, from junction with Natchaug River north to Route 101.

**Blackberry River**, from Norfolk to Canaan.

**Blackledge River**, from New London Turnpike (Route 2) to junction with Salmon River.

**Blackwell's Brook** from one mile above Route U. S. 6 to junction with Quinnebaug River.

\*The term "State-regulated Trout Streams" includes all of the streams on which the department exercises special regulatory power regardless of whether control was secured by lease, purchase or through cooperative regulated agreements with the property owners.

- Branford River**, from about  $\frac{3}{4}$  mile above Foote's bridge to Ward's Mill Pond. The section above Route 139 is reserved for women.
- Broad Brook**, from  $\frac{1}{4}$  mile above Route 140 to junction with Hydes Brook.
- Chatfield Hollow Brook**, Cockaponset State Forest, Killingworth.
- Dickenson Creek**, from  $1\frac{1}{2}$  miles upstream to junction with Salmon River.
- Eight Mile River**, within the boundaries of Devil's Hopyard State Park.
- Farm River**, intermittent stretches from first crossroad above Waltonian Club south.
- Farmington River, West Branch**, from Colebrook River to Pleasant Valley.
- Fenton River**, from Route 101 to Kirby Pond
- Housatonic River**, intermittent stretches.
- Jeremy's River**, from New London Turnpike (Route U. S. 2) to junction with Blackledge River.
- Macedonia Brook**, Macedonia State Park, Kent.
- Mill River**, Hamden, from Tuttle Avenue south to Skiff Street.
- Mt. Hope River**, from its junction with the Fenton River north to Route 101.
- Mt. Misery Brook**, Pachaug State Forest, Voluntown.
- Muddy River**, from East Wallingford to below Clintonville.
- Myron Kinnie Brook**, Pachaug State Forest, Voluntown.
- Natchaug River**, from Phoenixville to Kirby's Mills, Mansfield Hollow.
- Norwalk River**, from Georgetown to Winnepauk.
- Pequonnock River**, from Manning's Bridge, Monroe, to Beardsley Park, Bridgeport.
- Pomperaug River**, from one mile below Bethlehem line to South Britain.
- Quinnipiac River**, from Dunham's Bridge, Plainville, to Hanover Pond, Meriden.
- Roaring Brook**, from about one mile below route 15, Stafford, to junction with the Willimantic River.
- Salmon Brook**, Granby, **East Branch**, intermittent stretches.
- Salmon Brook**, Granby, **West Branch**, lower section only.
- Salmon River**, from junction of Jeremy's River and Blackledge River to Leesville dam.
- Sandy Brook**, from Phelps farm, Colebrook, to junction with Farmington River.
- Scantic River**, from crossing of Route 83 south to Summerville Mill Pond.
- Shepaug River**, intermittent stretches from Judd's Bridge to Housatonic River.
- Snake Meadow Brook**, from its source to Moosup River.
- Weekepeemee River**, intermittent stretches north of junction with Pomperaug River.
- Willimantic River**, from one mile below Babcock Bridge, West Willington, to Coventry Depot.
- Yantic River**, from  $\frac{1}{2}$  mile above Rubber Mill Pond to Fitchville Pond.

The State-regulated streams receive a large percentage of the trout distributed each year. Normally they receive all of the two-year old brook and brown trout, nearly all of the two-year old rainbows and over fifty per cent of the yearling brook trout. The remainder of the yearling brook trout which are not planted in the State-regulated streams are planted in suitable open streams throughout the state.

A few two-year old rainbow trout are planted in trout lakes. However, almost all of the rainbow stocking in lakes is with yearling fish and is made in the late fall. The advantages of this method of stocking trout lakes as compared to stocking two-year olds in the spring are that more trout can be liberated each year without increasing hatchery space and the trout have an opportunity to acclimate themselves before the fishing season. These fall-planted trout are not so large by the following spring as they would be if they had been carried in hatchery rearing pools for the same period but they are superior in color, fighting qualities and flavor and are generally favored by anglers. The trout lakes which are managed in this way are opened later than the trout streams and remain open to trout fishing until October 31st. The department favors intensive stocking of suitable trout lakes because it relieves pressure on over-crowded streams, gives the habitual lake fisherman an opportunity to catch trout and provides trout fishing throughout the summer and fall months.

Fall planting and late-season fishing is practicable only in lakes which provide suitable environmental conditions for trout. Unfortunately, Connecticut has very few good trout lakes. Prior to the Lake and Pond Survey, fourteen lakes were being stocked with trout. The number of lakes receiving trout has been reduced to seven as a result of these investigations and it seems probable that this number may be further reduced. The savings effected by eliminating trout plants in unsuitable waters will make it possible to concentrate efforts in better areas and to make really good fishing in at least three lakes.

### Plant Improvements at Trout Hatcheries

Following a policy of increasing the rearing capacity of our trout hatcheries and rearing stations, several additional pools have been brought into use during the biennium. Further plans for adding to our facilities are now under consideration which will enable the department to stock increasing numbers of legal fish in Connecticut's trout waters.

There are a number of pools at our hatchery plants which can be utilized as additional rearing space if water supplies can be maintained and additional spring water located by driving shallow wells.

In 1938 the Civilian Conservation Corps at Camp Lonergan, Voluntown, constructed one pool one hundred feet by forty feet on Chapman Brook for trout rearing. This pool proved so successful that another was constructed in 1939, and at the present time a third one is

being constructed. This series of pools will accommodate approximately fifty thousand fingerling brook trout in 1940 for distribution as yearling trout during the spring of 1941. These three pools will utilize all the water supply from Chapman Brook. Several other locations in the Pachaug Forest area are to be investigated for possible water supplies and construction of similar rearing pools in this area.

A new pool one hundred feet by forty feet is under construction in the Shade Swamp area, Farmington, which, when completed, will have a capacity of approximately twenty-five thousand fingerling trout.

At the Kensington station a large pool formerly utilized for pond fish has now been surveyed for an improvement in its design and water supply. When the necessary construction is completed it will provide additional space for the rearing of adult trout.

Another pool at Shade Swamp, formerly in use, has been reconditioned and stocked with browns for winter holding.

At the Federal hatchery at Hartsville, Massachusetts, ten thousand brook trout are being held for this department under a cooperative agreement in which the food for the winter period is supplied by our department. If our rearing capacity can be sufficiently increased, these fish can be held through the following winter at our own plants.

On State-owned land below the Burlington Hatchery there is room for the construction of a large rearing pool, utilizing the water now discharged from the hatchery.

Tables of trout distributions for the years 1938 and 1939 are given in the back of this report.

### Pond Fish

Rearing, salvage and purchase of pond fish has been continued during the biennium, with the principal supply of fishes being taken from the Connecticut River commercial fishermen. Pond fish rearing ponds at the Burlington and Kensington Hatcheries continue to produce a considerable quantity of fingerling calico bass, golden shiners and bullheads.

Bog Meadow Reservoir in Norwich, under management by the department through an agreement with the City of Norwich and the Norwich Fish and Game Club, produces many adult and some fingerling yellow perch, bullheads and golden shiners.

Branford Reservoir, under management through an agreement with the New Haven Water Company, will be seined in the near future. It is expected that there will be a good supply of pond fishes secured from this reservoir which will be stocked in open lakes and ponds.



Stream improvement will increase the holding capacity of trout streams. This work can be accomplished with very little expense for materials. Demonstration work has been done on a few of the state controlled streams and the Department will be glad to give advice and assistance to any club interested in carrying out stream improvement projects.



In the years 1939 and 1940, in cooperation with the United States Bureau of Fisheries, a total of 684,000 smallmouth black bass fry were taken from a closed reservoir and released in the bass ponds of the state.

### \*Pond Survey

The preceding biennial report gave an account of the beginning of lake and pond survey work. During the period covered by that report (1936-1938) the work was restricted through lack of personnel and equipment. In 1937 only one part-time employee was available; in 1938 two technicians were employed and all the scientific equipment used was borrowed from Yale University and the University of Connecticut.

In 1939 necessary equipment was purchased and a crew of seven men was placed in the field. This crew was composed of three specialists, one student assistant who worked without salary, and three regular department employees, two of whom were deputy wardens. These wardens were technically trained men and fully capable of assuming their share of the scientific work. The 1940 field crew was similarly organized.

The waters selected for attention in 1937, 1938 and 1939 were widely scattered throughout the state. This was done deliberately so that the State-wide pond fish restoration problems might be analyzed. In 1940 a single section of the state, the Litchfield district, was systematically covered. An attempt was made to gather at least some information on even the smallest ponds while the larger and more important bodies of fishing water were studied more intensively.

Since the type of survey work which is now being carried on is relatively new in Connecticut, it might be well to indicate the scope of activities and some of the more important accomplishments to date. The fish food production of the various waters covered has been studied and the average production for the state is now known. Food production has been found to be closely bound to regional geology so that it is now possible to predict, within reasonable limits, what the food production of waters in the various sections of the state will be. The average growth rate of the important game species and the rate at which anglers harvest the fish crop has been determined. It has been pointed out where money could be saved by

- \*Lyle M. Thorpe, Aquatic Biologist, Leader of Survey.
- George W. Hunter, III, Aquatic Biologist, 1939-1940.
- Edward L. Deevey, Aquatic Biologist, 1938-1939.
- Thomas S. Austin, Aquatic Biologist, 1940.
- Kenneth L. Mackenthun, Student Assistant, 1940.
- Douglas D. Moss, Deputy Warden, 1939-1940.
- Alfred J. Hunyadi, Deputy Warden, 1940.
- James S. Bishop, Deputy Warden, 1939.
- Dwight Webster, Aquatic Biologist, 1938-1939-1940.
- Robert Ermisch, Student Assistant, 1940.
- William Dimick, Student Assistant, 1939.

eliminating unwise or superfluous stocking in certain waters and where concentrated stocking is needed as a result of environmental conditions over-fishing, or parasitism. The data gathered on the principal lakes has been interpreted in terms of a management program which can serve as a guide for the department and for local groups to use in improving fishing. The distribution and probable effect of the common fish parasites and diseases on fishing has been investigated. A considerable amount of information on the effect of copper sulphate treatments on fish production is available and this problem is receiving further attention through the cooperation of Yale University.

A manuscript covering the work through 1939 has been prepared and will be published when funds are available. This manuscript has been designed to fulfill an educational need as well as to convey information on specific waters. All the information which is now known of the life history and habits of the species found in Connecticut lakes and ponds has been brought together for the first time and incorporated in the report. The factors which work to produce a crop of fish are outlined and some of the more basic restoration problems are explained. A series of maps of the lakes covered has been prepared and will be made available to the public when funds are available. These maps are based on the aerial survey and show depths by contour lines.

It is planned to continue the Survey with the present organization until the state has been covered, including the Connecticut River, which will receive attention within the next two years.

Following is a list of the principal lakes covered by the Survey to date. Information on which to base a program for the improvement of fishing in these waters is on file at the office of the State Board and will be made available to individuals or organizations upon request.

Alexander Lake, Killingly  
Ball Pond, New Fairfield  
Bantam Lake, Litchfield & Morris  
Basham Lake, East Haddam  
Beardsley Park Pond, Bridgeport  
Black Rock Pond, Watertown  
Burr Pond, Torrington  
Candlewood Lake, New Fairfield, Danbury, Sherman,  
New Milford and Brookfield  
Columbia Lake, Columbia  
Cream Hill Pond, Cornwall  
Crystal Lake, Ellington & Stafford  
Gardner Lake, Salem, Montville & Bozrah  
Greensfalls Reservoir, Voluntown  
Halls Pond, Eastford  
Hatch Pond, Kent  
Highland Lake, Winchester  
Hodge Pond, Voluntown  
Housatonic Lake, Shelton & Derby  
Long Meadow Pond, Bethlehem

Long Meadow Pond, Middlebury  
Long Pond, Ledyard & North Stonington  
Mashapaug Lake, Union  
Moodus Reservoir, East Haddam  
Moriarity's Pond, Wilton  
Mt. Tom Pond, Litchfield, Morris and Washington  
Mudge Pond, Sharon  
North Farms Reservoir, Wallingford  
North Spectacle Lake, Kent  
Pataganset Lake, East Lyme  
Peat Works Pond, Meriden & Berlin  
Pickerel Lake, East Haddam & Colchester  
Pocotopaug Lake, East Hampton  
Powers Lake, East Lyme  
Quassapaug Lake, Middlebury and Woodbury  
Rogers Lake, Lyme & Old Lyme  
Rcseland Lake, Woodstock  
Samp Mortar Reservoir, Fairfield  
Shaw Lake, East Haddam  
Shenipsit Lake, Tolland, Ellington and Vernon  
South Spectacle Lake, Kent  
Stillwater Pond, Torrington  
Taunton Pond, Newtown  
Terramuggus Lake, Marlborough  
Trumbull Reservoir, Trumbull  
Twin Lakes, Salisbury  
Tyler Pond, Goshen  
Waramaug Lake, Warren, Washington & Kent  
Waumgumbaug Lake, Coventry  
West Hill Pond, New Hartford  
Willimantic Reservoir, Bolton, Vernon & Tolland  
Winchester Lake, Winchester  
Wattles Pond, Watertown  
Wononscopomuc Lake, Salisbury  
Wood Creek Pond, Norfolk  
Zoar Lake, Monroe, Newtown, Oxford & Southbury

In addition to the studies which were made of the important lakes listed above, an attempt was made to examine, at least superficially, all ponds and lakes in the Litchfield District. This area includes the townships of Bethlehem, Bridgewater, Canaan, Cornwall, Goshen, Harwinton, Kent, Litchfield, Middlebury, Morris, Naugatuck, New Milford, Norfolk, North Canaan, Oxford, Plymouth, Prospect, Roxbury, Salisbury, Sharon, Southbury, Thomaston, Torrington, Warren, Washington, Waterbury, Watertown, Winchester and Woodbury.

### State-regulated Ponds

Lake and pond fishermen have noticed an increased number of areas on which are posters announcing special regulations for fishing in that particular body of water. These waters are under State control and the special regulations which have been put into effect are an attempt to manage that area according to the prevailing conditions. A number of these waters were placed under regulation at the request of sportsmen and property owners before adequate biological information was available on

which to base a management program. The early regulations attempted to correct obvious mistakes in legislation and to aid nature in producing a fish crop by increasing legal lengths and decreasing daily creel limits. The Lake and Pond Survey has been able to demonstrate where many technical improvements in the special regulations would increase angling success but the principle of individual management for each body of water according to conditions peculiar to each body of water cannot be improved. Such management is the most efficient method known of gaining maximum fish production and should be expanded to include all of the important lakes and ponds of the state.

It has never been necessary for the State Board of Fisheries and Game to lease impounded waters. A few of the waters which are State-regulated have been purchased outright by the State Board or by the State Forestry Department. However, the majority of the regulated waters are controlled through cooperative agreement with the owners under authority of Section 3162 of the General Statutes.

Following is a list of the State-regulated Ponds:

Bearsley Park Pond, Bridgeport	Little Pond (Schoolhouse Pond), Thompson
Besseck Lake, Middlefield	*Millers Pond, Waterford
Black Rock Pond, Watertown	Mt. Tom Pond, Morris
Burr Pond, Paugnut State Forest, Burrville	Old Marsh Pond, Terryville
Columbia Lake, Columbia	Peat Works Pond (Silver Lake), Berlin-Meriden
Day Pond, Colchester	Pataganset Lake, East Lyme
Fulton Park Pond, Waterbury	Powers Lake, East Lyme
Gardner Lake, Salem	Roseland Lake, Woodstock
Green Falls Reservoir, Voluntown	Samp Mortar Reservoir, Fairfield
Hall's Pond, Eastford	Shaw Lake (Hayward Lake), East Haddam
Hatch Pond, Kent	Stanley Park Pond, New Britain
Holbrook Pond, Hebron	Stillwater Pond, Torrington
Joshatown Pond, Lyme	Taunton Pond, Newtown
Lindley's Pond, Woodbridge-Bethany	Winchester Lake, Winchester
Winnemaug Lake (Wattle's Pond), Watertown	Schreeder Pond (Chatfield Hollow) Killingworth
Wood Creek, Norfolk	Trumbull Reservoir, Trumbull
Cream Hill Lake, Cornwall	West Hill Pond, New Hartford
Lake Quassapaug, Middlebury-Wood- bury	Wononscopomuc Lake, Lakeville

\*Not to be under State-control after November, 1940.

## Commercial Fisheries

During the past year statistics have been gathered on the annual catch of the commercial fishing vessels docking at Connecticut ports, the value of boats and fishing gear employed in the fishery exclusive of the shellfish industry. An effort was also made to evaluate the damage to boats and gear resulting from the hurricane of 1938.

### BOATS AND GEAR IN CONNECTICUT 1939

(Exclusive of Shellfish)

	No.	Crew	Value	Gear	Hurricane Damage 1938
Registered Vessels.....	34	84	\$162,000	\$19,305	\$29,400
Motor Boats.....	199	310	147,790	112,634	83,589
Row Boats.....	131	168	6,574	14,529	8,716
	364	562	\$316,364	\$146,468	\$121,705
			Catch 1939		Value
Fish.....			7,676,668 pounds		\$275,556
Crustaceans.....			654,296 pounds		139,625
			8,330,964 pounds		\$415,181

Complete figures are available on the marine catch by months, species and ports. A summary of the reports is included here to show the importance of this industry in Connecticut. Forty-eight species appear in the commercial catch; of these the ten most important are given in the following table:

Months	BUTTERFISH		EELS (Common)	
	Pounds	Value	Pounds	Value
January.....	35,700	\$1,428.00	60	\$ 6.00
February.....	1,000	40.00	25	2.50
March.....			30	5.40
April.....	2,513	125.00	32	6.84
May.....	11,362	567.75	1,012	102.00
June.....	25,503	1,023.20	3,946	298.63
July.....	21,066	973.77	2,185	192.75
August.....	32,204	1,366.16	1,872	190.64
September.....	22,410	1,078.93	2,180	221.60
October.....	21,226	1,225.74	2,516	376.02
November.....	73,115	2,924.60	1,082	105.64
December.....	153,500	7,775.00	50	12.50
Year Reports.....	6,275	129.50	35,151	3,708.79
Total Catch for Year.....	405,874	\$18,657.65	50,141	\$5,229.31

FLOUNDERS			FLUKE	
Months	Pounds	Value	Pounds	Value
January	43,600	\$1,944.00		\$
February	39,600	1,492.00		
March	96,600	3,864.00		
April	164,504	5,209.92	210	25.20
May	291,194	8,768.42	69,794	7,452.84
June	449,611	11,874.25	34,282	3,402.64
July	300,887	10,067.43	16,714	1,771.52
August	116,872	3,414.82	34,703	3,103.27
September	104,070	2,882.77	77,266	8,009.73
October	274,493	10,979.72	9,110	874.26
November	262,173	8,596.26	245	25.00
December	129,760	5,290.40		
Year Reports	92,350	3,360.00	3,500	320.00
Total Catch for Year	2,365,714	\$77,743.99	245,824	\$24,984.46

LOBSTERS			PORGY	
Months	Pounds	Value	Pounds	Value
January	621 $\frac{1}{2}$	\$182.53		\$
February	406 $\frac{1}{4}$	142.19		
March	1,097 $\frac{1}{4}$	299.17	100	4.00
April	10,893 $\frac{3}{4}$	2,724.45	100	4.00
May	45,631 $\frac{1}{2}$	10,049.25	3,154	138.16
June	65,994 $\frac{1}{4}$	14,443.84	2,950	147.50
July	195,495	42,874.15	89,840	4,492.00
August	155,991 $\frac{3}{4}$	29,172.78	213,475	10,673.75
September	51,293 $\frac{1}{4}$	11,295.33	134,390	5,379.65
October	18,444	4,930.12	55,470	2,122.80
November	13,506 $\frac{1}{4}$	3,006.69	1,030	61.50
December	6,284	1,499.85	150	6.00
Year Reports	84,610 $\frac{1}{2}$	18,702.45	8,525	381.25
Total Catch for Year	650,269	\$139,325.80	509,184	\$23,410.61

SHAD			STRIPED BASS	
Months	Pounds	Value	Pounds	Value
January				\$
February				
March				
April	2,965	\$246.52	78	14.20
May	27,992	2,099.16	1,036	156.65
June	5,840	292.00	1,870	260.00
July			827	124.05
August			1,123	137.67
September			67	7.37
October			562	112.46
November			2,647	397.05
December				
Year Reports	345,377	14,602.09	736	63.00
Total Catch for Year	382,174	\$17,239.77	8,946	\$1,272.45

WHITING			YELLOWTAILS	
Months	Pounds	Value	Pounds	Value
January.....	2,290	\$ 68.70	325,475	\$8,004.88
February.....	250	8.00	351,020	10,530.60
March.....	300	9.00	348,060	7,047.20
April.....			290,105	4,639.38
May.....			60,374	1,054.61
June.....	3,000	30.00	33,350	667.00
July.....	10,900	282.50	174,610	3,492.20
August.....	19,200	384.00	179,485	3,589.70
September.....	94,750	2,842.50	120,430	2,822.28
October.....	94,725	2,841.25	203,275	5,081.88
November.....	28,745	1,064.65	326,986	8,174.65
December.....	5,840	175.20	392,920	11,787.60
Year Reports.....	420	8.40	50,000	1,000.00
Total Catch for Year.....	260,420	\$7,714.20	2,356,090	\$67,891.98

Total poundage and value of 10 predominant species listed above.....	7,734,638 pounds	\$384,472
Total poundage and value of other species.....	596,326 "	\$30,709
Grand Totals.....	8,330,964 pounds	\$415,181

It will be seen from the foregoing table that February is the month of smallest catch and that tonnage increases to a peak in July and gradually tapers off with the approach of winter. Two species, shad and suckers, have been included in the commercial table which are taken in inland waters rather than marine. The catch figures given above together with the values have been given by the fishermen and represent the prices paid to the producer. No attempt has been made to follow the product through the retail market or to estimate the number of persons engaged in handling, marketing or processing.

Comparing our figures for 1939 with those of the U. S. Bureau of Fisheries for previous years, it is seen that the catch and value of fish have increased over last year. Over a ten-year period, however, our present tonnage represents a reduction. The total value of the 1939 catch is comparable to that of the last three years which indicates an upward trend from the low period of 1933 when the value was less than half that of the present.

## Marine Fisheries

### Lobster Rearing

The original lobster rearing station at Noank built in 1905 was entirely destroyed by the gale and tidal wave which lashed the Connecticut coast in September of 1938. As practically all of the foundation and surrounding grounds had been swept away, it was considered inadvisable to rebuild on the original site. Approximately one quarter of a mile north of the old hatchery on the Mystic River an abandoned factory grounds and river

frontage were secured by the department. Plans and specifications were drawn up by the Department of Public Works and construction begun in 1939.

The new plant is a two-story brick building 50 feet by 60 feet with a cement main floor where all rearing operations are conducted. There is also a small room for laboratory work, a lavatory and room for storage and preparation of feed. On the second floor a work room 17 feet by 60 feet extends across the west end of the building. This work room is equipped for repairing, building and painting all equipment used in the rearing of lobsters and hatching of flounders. In back of the work room is the storage room; also a 5,000-gallon salt water tank which supplies water to the rearing boxes on the main floor, and a one hundred-gallon fresh water tank which supplies the laboratory and feed room. There is also a small storage and locker room. The office and heating plant are housed in an ell on the north side of the main building.

A concrete platform extends from the main building toward the Mystic River. This platform is approximately 50 feet by 50 feet. All of the hatching operations are conducted on this platform in wooden hatching boxes. Mature egg-bearing lobsters are placed in the boxes and allowed to hatch the lobster fry under natural conditions. After hatching off the mother lobster, the fry are transferred into the rearing boxes in the hatchery building. The young lobsters are under twenty-four hour observation. Finely ground beef liver is given them every two hours. They reach the fourth or diving stage in approximately fifteen days, when they are carried out to shallow reefs along the Connecticut coast and released. Lobster hatchery operations are in full progress and the hatchery is open to the public during the months of June, July and August.

A pump house is constructed on the south side of the concrete platform. Two 6 inch by 5 inch centrifugal pumps driven by two fifteen horse-power electric motors are installed. Also, a fifty horse-power gasoline motor for auxiliary power is installed for a stand-by unit in case of failure of electric power.

Each of these pumps delivers 750 gallons of sea water per minute to the 5,000 gallon storage tank in the hatchery. Brass piping is used throughout the pumping and hatchery system.

A dock extending into the river from the concrete platform completes the plant.

Owing to various delays the hatchery did not commence operations in 1940 until June 20th, and with water temperatures below normal, the output of fourth stage lobsters was 96,000 which, considering delay and operating an entirely new plant, was very satisfactory. In a normal lobster year this plant should show a very considerable increase in production of fourth stage lobsters over previous seasons at the original hatchery.



Lobster Hatchery reconstructed by Public Works Department 1939-1940



### Flatfish or Winter Flounder

Since the Marine hatchery did not operate until June of 1940, the hatching and liberation of flounders was not considered during the past year. Therefore, we do not have anything to report concerning this activity during the biennium. It is expected that the hatchery will continue the propagation of this species in the early spring of 1941, with increased hatchery space, provided breeding stock can be secured. The output of flounder fry from this station should be approximately three to four hundred million. Hatching methods are practically the same as are practiced in lobster culture with the exception of feeding. The fry are transported in cans soon after hatching and released in the shallow coves, rivers and bays along the Connecticut coast.

### SHAD

There did not appear to be any noticeable change in the duration and size of the shad run during 1939-40. Catches were those of a normal season although prices ranged exceptionally low.

It has been a popular belief of many persons that if there were not a dam at Leesville, shad coming into the Salmon River would continue further upstream to perform the spawning function. Observers during the past two years report very few shad in the Salmon River and no shad were observed or reported above the destroyed dam at the Leesville powerhouse.

The department has not attempted any shad restoration work during the biennium but it would seem necessary to attempt this work again provided a suitable hatchery site could be located. The Leesville dam is being rebuilt at the present time. Observations on fish runs should be continued on this river before a decision is made to establish a new hatchery.

### MARINE FISHERIES COMPACT

Under the auspices of the Council of State Governments, Connecticut's Commission on Intergovernmental Cooperation has participated in interstate conservation conferences to discuss the establishment of legislation which would offer proper control of marine fisheries. The conservation officials of the various states have also been in attendance. Interstate meetings have been held in New York, 1937 and 1938, Boston, and Charleston, South Carolina, in 1940.

The legislation proposed originally included a consent to interstate compacts, which was passed by the Congress during the last session, a transportation act and a proposal for an interstate fisheries compact.

The transportation act proposed to enlist federal aid in the enforcement of fisheries laws and regulations by assisting the states in the control

of interstate shipments of fish and fisheries products. After considering the difficulties in the way of this procedure, the transportation act has been withdrawn and will not be submitted to the legislatures of any of the cooperating states until points of difference can be adjusted.

The Marine Fisheries Compact provides:

- (a) that any of the Atlantic Coastal states (and Canadian provinces with the consent of Congress) may join;
- (b) that three representatives be appointed to a Commission which shall investigate methods of conservation of Marine fisheries and shall make recommendations to the several states for adoption or rejection;
- (c) that an advisory council of representatives of the fisheries industry be set up;
- (d) that expenses of the Commission be borne pro rata by the states.

The compact has been proposed as an opportunity for the states to cooperate in the solution of the problems of marine fisheries regulation. At the present time the practice is for each state to attempt independent regulation which results in very poor control of migratory species due to lack of uniformity in laws.

A meeting of Connecticut fishermen was held at Noank on August 19, 1940, attended by representatives of the Council of State Governments, at which the compact was presented for discussion. The compact was favorably received and was recommended for submission to the legislature.

The Connecticut Commission on Intergovernmental Cooperation has included the compact in its legislative program for the current Assembly and its passage is recommended by the State Board of Fisheries and Game.

### Members of Division of Fish Restoration

Frank N. Banning, Superintendent of Fish Culture  
Kenneth E. Cobb, Assistant Superintendent of Fish Culture  
Lyle M. Thorpe, Aquatic Biologist  
Edward Reeve, Hatchery Foreman  
Theodore E. Reynolds, Hatchery Foreman  
Charles L. Rogers, Hatchery Foreman  
George Green, Fish Culturist  
William L. Reeve, Fish Culturist  
William R. Robinson, Fish Culturist  
George T. Young, Fish Culturist  
Hadley W. Fitch, Fish Hatchery Helper  
John J. Ginocchio, Fish Hatchery Helper  
Ralph D. Green, Fish Hatchery Helper  
Robert V. O'Brien, Fish Hatchery Helper  
William A. Tompkins, Fish Hatchery Helper  
Lloyd R. Congdon, Caretaker

## Division of Wildlife Protection and Law Enforcement

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Nearly all our citizens have an interest of one sort or another in our wildlife resources, extending from a back-yard observation of local and migratory birds and animals to a national interest in all forms of wildlife. There are nature groups, photography clubs and individuals with a natural fondness for the out-of-doors who find their greatest pleasure and relaxation when associating with nature. Within these groups there are hunters, anglers and trappers, men and women, young and old, participating in sports of skill as old as mankind.

All these people depend on the warden service for protection of the particular species in which they are interested. At times it is impossible to meet the demands made, since there are but twenty-four wardens to cover the entire state.

If the members of the warden service devoted their entire time to law enforcement there is no doubt that they could do a better job in this field. There are more constructive things, however, which must be done for wildlife. Among these are protection and improvement of natural habitat, providing animals with food when natural foods are inadequate, the salvaging of fishes from lakes and ponds that are drawn down and from streams where the flow of water becomes dangerously low. The improvement of environment, and the proper balance of animals in their respective habitat are two of the most important factors in wildlife management. The members of the warden service should be as familiar with game management practices necessary to sustain wildlife in their respective districts as they are with the laws relating to protection. The warden service is fortunate in having a number of university graduates trained in wildlife management. While with us, their training will continue as will the training of all other members of the service. We want and propose to do everything possible to have a warden service which is trained, alert and efficient.

This division of the department is charged with the responsibility of protecting all wildlife and enforcing the laws and regulations relating to fish and game. This limitation of power, at times, is a serious handicap. Authority to cope with certain other violations, incidental to the wardens' routine work, would bring about greater respect for these law enforcement officers and reduce the hazards to which they are exposed. A detailed discussion on this subject will follow.

The expression "Wildlife Protection" does not necessarily mean protection of wildlife against violations of the fish and game laws and regulations. Wildlife protection covers many fields, including protection to property owners against damage done by wildlife to crops, nursery stock, flowers and buildings. It also includes protection to wildlife against starvation, severe weather, fire, destruction of habitat, drought, pollution, stream obstruction, erosion, disease and predators. These subjects are mentioned here although they cannot be treated in complete detail in this report.

Primarily wardens are law enforcement officers and when originally organized their duties were chiefly confined to such assignments. During the past twenty years conditions have changed in all fields of endeavor. In the field of wildlife there have been many radical changes. New highways and new and better automobiles have brought former remote hunting and fishing grounds within easy traveling distance of thousands. Shorter working days have given the sportsman more time to pursue his favorite quarry and have put more sportsmen in the field. Improved methods of communication have resulted in heavy concentrations of sportsmen at any given place in the state, or on the sound, when the news is broadcast that the run is on, as relates to any species of fish, or that a flight of any migratory bird has been observed. At such times, and at other times also, most sportsmen are content with a reasonable "take," but there are some who do not think of the future supply and their "take" often exceeds their personal needs.

The element of luck enters into hunting and fishing, but it can not be denied that considerable skill is required to be consistently successful. The manufacturers of fishing tackle and gear, guns and ammunition have made great strides in improving their products. If their claimed qualities produce desired results it is inevitable that the fish and game populations will decrease. When we consider all the factors involved in game population reductions it must be appreciated that programs of artificial aid are necessary if there is to be a reasonable annual crop sufficient to satisfy the demand.

These and other factors have resulted in necessary functional changes in all divisions of the department. The warden service, by necessity, has been called upon to perform, first one and then another, of non-law enforcement duties. These now constitute a substantial part of their total working time. This is sound management when it is considered that the warden service is the only division with personnel located in all sections of the state. If these necessary functions were not performed by the wardens, additional personnel would be required.

In an effort to obtain data relating to the activities of State Wardens and Deputies, a total of twenty-three men, not including the Marine Warden or Patrolmen, a work sheet was designed which lists most of their duties as follows:



Trout distribution is one of the many duties of the modern warden service. In Connecticut the fish are distributed throughout the entire length of the stream by the use of floating live cars. This method of distribution helps to create good fishing over the entire length of the stream.



**LAW ENFORCEMENT:** Patrol, investigations, office work, miscellaneous.

**GAME WORK:** Liberating birds, building feed stations, feeding birds, trapping birds or quadrupeds, pheasant egg work, food patch work, posting and map work, leases and cooperative agreements, surveys, field trials, turtle trapping, office work, miscellaneous.

**FISH WORK:** Planting fish, stream or pond work, leases and cooperative agreements, turtle trapping, boat care, posting and map work, miscellaneous.

**MISCELLANEOUS:** Educational work, care of equipment.

Each day the wardens record the hours spent on each activity. This system was started on January 1, 1940, and to June 30, 1940, a six months' period, the following results were shown:

23 wardens worked a total of 36,761 hours	
Law Enforcement	24,673 hours or 67.1%
Game Work	5,837 hours or 15.9%
Fish Work	4,516 hours or 12.3%
Miscellaneous	1,734 hours or 04.7%

These are actual figures on actual time spend on these duties. It is interesting to analyze these figures more carefully. Wardens are not required to work more than eight hours a day, if the work to be done can be accomplished in this time. On the basis of eight hours a day six days a week the twenty-three men would work a total of 28,704 hours. The above figures show they worked a total of 36,761 hours.

This figure represents 8,057 hours worked in excess of the required eight hours per day, which in man hours is approximately the equivalent of the time of six and one-half men working on an eight hour basis for six months.

A further study of these figures shows each warden, for this six months' period, worked an average of 1,598 hours, as against a required 1,248 hours, or a total of approximately forty-four days' overtime.

These figures are for a six-months' period only and no doubt the percentage figures will change when data for a full year has been compiled. It would seem, however, to indicate that the warden service is not top-heavy with man-power and that a further reduction in personnel will merely result in longer hours of work per day per man or inadequate coverage of our present functions. At this point it might be well to mention that the members of the warden service are not paid on an hourly or per diem basis. They are paid on a monthly basis and receive no additional

compensation regardless of the hours worked. Some sportsmen are also under the misapprehension that wardens receive the fees incidental to a prosecution. This is not the case.

### Powers and Duties of Wardens

Section 3105 of the General Statutes relates to the powers and duties of wardens. Such powers are restricted to enforcement of the laws relating to fish and game and Section 6123 of the General Statutes, which relates to exposure of poison. Since the warden service is supported entirely by license money received from sportsmen it is not felt that the service should compete with other law enforcement agencies or be expected to enforce the General Statute law.

Few people realize the hazards to which a warden is exposed. Referring to the Eighteenth Biennial Report of the Board for the period ending June 30, 1930, the late Chief Warden A. Joseph Williamson stated, "These wardens, unlike the State Police or even the town constables, are constantly in the field where they cannot call for help in case of an emergency. Experience has demonstrated that it is usually unsafe for one man to travel alone and attempt to make arrests, especially where there are two or three violators involved. For this reason it is customary to send two wardens together during the night work and much of the time during the day."

Human reaction to arrest and prosecution is no different today, especially with certain moronic types, persons with an impulsive nature and irresponsible youths.

Our records for the past several years include many experiences where the wardens have been at a distinct disadvantage in dealing with deliberate irresponsible violators who, suddenly confronted with the possibility of arrest, resorted to methods bordering on violence to escape apprehension. Few, if any, of these experiences involved anglers. Some angling violators, who fear apprehension is imminent, will flee to cover. With certain types of irresponsible hunters it is a different story. They are always armed with some sort of firearm which, apparently, gives them a sense of security. If overtaken with the impulse to stand their ground and resist arrest by threatening the warden with their weapons, which has happened many times, a serious situation instantly confronts the officer. Realizing he is facing a dangerous person and that events to follow depend on his conduct he must be composed, skillful and discreet. Certainly he should not risk his life to effect an arrest. If, however, an arrest is made at that time or as a result of later investigation, the warden can only charge the offender with violations of the fish and game laws. The offense for resisting or threatening or possible assault or any other abuse would require a separate prosecution by some other law enforcement officer.

The most serious violator is the deer hunter and the night hunting deer jacker. He is usually armed with a high-powered weapon and seeks his quarry while traveling in his car on back roads in sparsely settled sections. This is one of our most serious violations, not because we are trying to protect a diminishing species, or necessarily the taking of a protected game animal, but because of the potential danger of the hasty indiscriminate discharge of high-powered firearms. The rural landowner, upon whom we are dependent for places to hunt and fish, is determined that this type of violation must be stamped out.

The jacklighter will resort to any number of devices to elude arrest. He fails to stop his car, tries to force the wardens off the road, threatens to run them down and in some instances has collided with our cars and failed to stop, thereby evading responsibility, a serious motor vehicle violation. If he can get away by driving recklessly, he discards any evidence which would tend to prove him guilty of jack lighting. If finally apprehended, the warden is obliged to release him unless he can prove a fish or game violation.

The members of our warden service are experienced and well trained in the technique of law enforcement and legal procedure. They are carefully supervised and their record for good judgment during the past few years has been outstanding.

Regardless of the extent of authority which might be granted these officers, there is the assurance that they would devote their efforts only toward our common goal, better hunting and better fishing.

The following table of expenditures for warden service during the past ten years is conclusive evidence that a sincere effort is being made to reduce the cost of this service to the sportsmen.

**WARDEN SERVICE EXPENDITURES FOR THE TEN-YEAR PERIOD  
JULY 1, 1930 TO JUNE 30, 1940**

July 1, 1930 to June 30, 1931.....	\$ 89,346.22
“ “ 1931 “ “ “ 1932.....	87,716.27
“ “ 1932 “ “ “ 1933.....	76,332.16
“ “ 1933 “ “ “ 1934.....	71,225.37
“ “ 1934 “ “ “ 1935.....	72,605.60
“ “ 1935 “ “ “ 1936.....	72,218.83
“ “ 1936 “ “ “ 1937.....	75,585.10
“ “ 1937 “ “ “ 1938.....	70,853.64
“ “ 1938 “ “ “ 1939.....	68,852.65
“ “ 1939 “ “ “ 1940.....	62,666.96
	\$747,402.80

The average expenditure per year for this period is approximately \$74,740.30. For the 1939-1940 fiscal period we operated for the sum of \$12,073.34 less than the average. The difference between expenditures for the periods 1930-1931 and 1939-1940 is \$26,679.26.

Expenditure for the fiscal period 1939-1940 is a figure at which we cannot hope to continue since the majority of the personnel during this period were drawing the minimum salary for their respective positions. To keep trained and qualified men in the service there must be recognition in the form of increased compensation.

### Warden School

From August 1 to August 28, 1938 a warden school was held at Camp Concord in the American Legion Forest, Barkhamsted. There were two classes, each of two weeks' duration. This was more or less a refresher course. The important subjects covered at the school in 1937 were carefully reviewed and discussed in more detail. Printed lectures on these subjects were retained by the wardens for later study and review.

### Policies and Programs

Since we are dealing with living things subject to fluctuations and changes our policies and programs must necessarily change from time to time. We try to keep the wardens informed on these subjects, thereby avoiding dissemination of misinformation.

### Activities of Wardens In Game Management and Restoration

This division of the department requires the assistance of the warden service in performing many field activities. We cannot expect the wardens to be game technicians, but they are being taught as much on this subject as time will permit, the important subjects being various types of cover and natural foods desired by our game birds and quadrupeds and control measures to be practiced to keep a proper balance of wildlife species on managed areas.

This information they pass along to interested groups such as sportsmen's organizations, members of the Grange, Boy Scouts, 4-H clubs and others. In many instances this type of work has resulted in some active project to make our lands more attractive to wildlife.

### Bird Liberations

During the biennium the warden service released 30,879 pheasants and 1,658 quail. They also assisted in banding some of these birds. All birds purchased must meet certain standard specifications.

## Pheasant Eggs

During the biennium the wardens distributed 16,640 pheasant eggs to 527 cooperative breeders who hatched and raised the birds to the age of fourteen to sixteen weeks. All of these birds were liberated on land open to the public.

## Food Patches

Under a cooperative program certain groups are planting food patches for wildlife. The wardens distribute seed and give advice on this subject under the direction of the Game Management Supervisor. They also assist in the planting of food plots on State-owned lands.

## Feed Stations

During the winter of 1939-1940 the wardens built five hundred bird feeding stations. Of this number, 218 were on regulated areas and 282 were on non-regulated areas. It was estimated that these stations were used by approximately 1500 pheasants. This is typical of the work done each winter.

## Distribution of Feed

During the past two years the department has purchased approximately twenty tons of grain for the feeding of birds. In addition to this, considerable grain was donated by grain dealers and groups with an interest in this field. Waterfowl received a portion of this food. Certain species fail to migrate until the weather becomes extremely severe and some wild ducks remain in the state throughout the winter. It is felt that artificial feeding of waterfowl will encourage these birds to remain in northern areas longer than they should. It is their nature to migrate and this instinct should not be disturbed by man. Artificial feeding of these birds is done only when the situation is acute.

## Breeding, Resting and Sanctuary Areas

During the breeding seasons there is a considerable loss of wildlife due to the elements, such as excessive rain, flood and fire. It is important that the wardens make careful observations and avoid liberating the spring breeding stock of birds in areas subject to flood, such as the Connecticut River valley, until all danger of such flood has passed.

Migrating birds, especially waterfowl, on their long flights north preparatory to the spring breeding season require resting areas where they may build up stamina to continue the flight. Thousands of ducks select Connecticut waters and remain one or several days. Being exposed, they are easy prey for the illegal gunner. The wardens devote considerable

time to patrol in these sections when the flight is on. An annual estimate of the number of waterfowl in the state is a regular activity of the division.

### Sanctuary Areas

On all managed shooting grounds a limited number of sanctuary areas are established and so posted. During the open shooting season wardens and patrolmen give special attention to such areas and enforce the regulations relating thereto. The regulations provide that wildlife shall not be disturbed and that there shall be no trespassing. Hunters who permit their dogs to enter these areas are condoning a violation and are subject to license revocation.

Some nature lovers who enjoy the presence of wildlife on their property feel it is a proper function of our department to designate their land as a sanctuary, post it as such and give it adequate patrol. All requests for establishment of sanctuaries are investigated by a member of the warden service. If there is justification, further inquiry is made by a representative of the Game Division and a recommendation for the establishment of a sanctuary is made on the basis of the suitability of the area.

### Trapping and Redistribution of Game

On certain areas where hunting is not possible because of landowner opposition or congestion, various species of wildlife seem to thrive. The area may cover the land of several owners and difficult problems sometimes arise when there is a variance of landowner opinion as to proper control. It is admitted that many species of game birds and quadrupeds, at certain seasons of the year, may damage vegetable gardens, flowers, shrubbery and fruit-bearing trees. Some of the owners will suffer the loss, which they regard as negligible, and insist that nothing be done. Others will demand that some effort be made to alleviate the situation.

Trapping is the only answer since the use of poison is illegal and shooting is impracticable. When food is abundant, trapping is not successful. When trapping methods are employed, it is time-consuming work as the animals should be taken alive and should not remain for too long a period in a trap. This means daily visits to each trap.

Squirrels, encouraged to live in a community by feeding, adjust themselves to the environment and remain. They are regarded as pets and have little fear of man. If, during the breeding season, adequate nests are not available they frequently gnaw their way into buildings, very often occupied homes. The reaction of the householder is invariably unfavorable, although he may have contributed to their presence by artificial feeding. If they succeed in getting into a house and rear their young, little can be done without causing the owner expense and inconvenience.

Nests are usually between partitions or other places difficult to get at. When the young are ready to leave they will vacate and repairs can then be made to the house to keep them out in the future.

Although wild animal life does some damage there is rarely a complaint from the man who tills the soil for a livelihood. From experience he is acquainted with their beneficial acts. He knows bird life will aid in the control of insects which annually take a heavy crop toll, and he also knows that other wildlife forms bring him many benefits.

### Roaming Dogs

Since our warden service is restricted to enforcement of the fish and game laws, we cannot enforce the laws relating to the control of dogs. These laws are administered by the Commissioner of Domestic Animals. They may be enforced by Dog Wardens, Municipal Police, State Police and Constables. Our department, however, is as interested in the enforcement of these laws as any other group. It is well known that dogs which are permitted to wander afield disturb wildlife, especially during the nesting seasons. The warden service cooperates with the Commissioner of Domestic Animals and local dog wardens by gathering evidence which is turned over to a proper official.

### Landowner Contacts

Our wildlife population is determined somewhat by farming methods practiced by rural landowners. In their contacts with such landowners the wardens try to discourage the indiscriminate cutting and burning of hedge rows and other game cover and unnecessary destruction of natural game foods. Since most landowners are anxious to have a crop of wildlife on their lands they willingly cooperate.

### Balances in Wildlife on State-owned Land

The law provides that a trapper must have the written permission of the landowner before he can engage in trapping. The law also provides that our department shall have control of all wildlife on all land owned by the state. The Board also has control on certain lands which are leased or under regulation. To open all this land to indiscriminate trapping would have undesirable results. Persons authorized to trap on these lands are carefully checked by the wardens and are assigned the privilege of trapping a definite area. One requirement is that they must take certain predators as well as furbearers. During the season they are occasionally checked by the wardens and they must report their total take at the close of the season. According to these reports opossum are beginning to appear in fair numbers in certain sections of the state. Of the sixty-four persons

authorized to trap State land in 1938-1939, one reported taking fifteen opossum in the Pootatuck Forest, New Fairfield, one reported taking two opossum in the vicinity of Candlewood Lake in Brookfield and New Fairfield, and two trappers reported taking two opossum at Shade Swamp, Farmington. Sixty other state trappers did not take any opossum.

### Scientific Research

Various investigations are conducted from time to time by qualified specialists who require specimens for their work. When this occurs the wardens are called upon to supply whatever happens to be needed. They obtain specimens through their own efforts or by the cooperation of sportsmen with whom they are acquainted.

### Disease

Diseased animals are sent to a qualified person for examination. Careful observations may bring to light a disease which might take a toll of wildlife. If methods of control are available, they are recommended by specialists.

### Fresh Water Fish Restoration

All work of this nature is under the direction of the Division of Fish Restoration. It is an extremely broad subject and deals with the matter of improving our streams, lakes and ponds so that they will be more suitable to the fishes that inhabit them. The warden service is called upon to assist the Fish Division in all branches of fisheries management. Some of the more important activities are discussed below.

### Distribution

During the biennium the wardens assisted in the liberation of all trout distributed by the department. In planting fish an effort is made to distribute them throughout the length of the stream. Where possible, a planting boat is used. This is loaded and two wardens start down the stream, one maneuvering the boat and the other liberating the fish. This method can only be employed on the larger streams. When the boat cannot be used the fish are planted by pail. When possible, plants cover the entire length of the stream. Since we do not have roads that parallel all streams, much of this pail planting is done by walking long distances from the trucks to the streams. Careful distribution results in greater angling satisfaction.

The wardens must know the streams in their district and seasonal changes that occur. It is important that they familiarize themselves with available fish food and whether a stream will support brook, brown

or rainbow trout. They must know the streams that flood in the spring and those that dry up in the summer and sections of streams affected by pollution in order to govern the plantings accordingly.

### Surveys

Following the flood and hurricane in September 1938 wardens walked the entire length of every stream that had been affected. Observations were made of obstructions caused by fallen trees and debris, dams that had washed out and dams with weakened structures, silting of agricultural lands, bridges and roads that were washed out or weakened, and scoured stream beds. This information served a dual purpose. Our department was furnished with information for the guidance of further fish plants and a complete report was made to the State Water Commission on the condition of dams. Many valuable photographs were taken and maps prepared showing exact locations of the above situations.

Other periodical surveys are necessary to keep the Fish Division informed on low water and high temperature conditions in streams, lakes and ponds. Where it is feasible to salvage fish because of the above conditions, or when waters are drawn down to make dam repairs, the wardens assist the Fish Division in this work.

### Stream and Pond Obstruction

The law on this subject covers the use of any rack, screen, weir or other obstruction, including dams, which would prevent the passage of fish in any stream or through the outlet or inlet of any pond or stream. The wardens investigate all complaints of this nature. Where no public interest is involved permits may be issued for the placing of screens or other obstructions. The wardens also investigate complaints and inquiries relating to fishways. Their reports on these subjects are turned over to the Fish Division.

### Copper Sulphating

Under the law the use of copper sulphate is permitted to reduce and control the over-abundant growth of plant life. Authorization must first be obtained from the department and the application of such treatment must be done under the supervision of a warden.

### Pollution

Stream pollution is one of the serious problems in the maintenance of good fishing. Many streams in Connecticut receive the untreated wastes of manufacturing plants and municipalities. Many of these streams

were natural fishing streams before being rendered unsuitable by pollution. The members of the warden service are constantly on the alert for violations of the law on this subject. When such matters come to their notice they investigate, and a copy of their report is forwarded to the State Water Commission or the State Health Department, these departments being charged with the responsibility of enforcing the pollution laws.

### Private Waters

Under the law certain bodies of water are eligible for registration with our department as private waters. Each application is investigated by a warden to determine such eligibility.

### Pond Fish Program

The Fish Division, for the past three years, has had a pond survey crew working on a pond fish restoration program. The crew is made up entirely of technically trained men. The warden service has contributed to the success of this work by having in its service men with the necessary technical qualifications for assignment to the crew. In 1939 and in 1940 two men from the warden service were released from their warden service duties and assigned to pond survey work for a three months' period, from June 15 to September 15, each of these years.

### Land and Water Acquisition

During the last session of the legislature appropriations for this division were sharply cut and the position of chief of this division eliminated. Practically all of the field work formerly handled by the field agent of this division is now done by the warden service. This involves obtaining, investigating and execution of leases and cooperative agreements relating to the acquisition of lands and water for the purpose of hunting and fishing and establishing of sanctuaries.

During 1940 the warden service obtained for the department a more definite control of fishing rights on West Hill Pond, New Hartford, and Wononscopomuc Lake, Lakeville.

The purchase of posters, which was formerly handled by the agent of this division, is now administered by the warden service with the assistance of the fish and game divisions. Actual posting has always been a duty of the warden service. A careful analysis is now being made of the many and varied types of posters which have been in use with the thought that economies can be effected by simplifying and standardizing wherever possible.

## GENERAL DUTIES

## Arrests and Warnings

The table of arrests and percentages of convictions on page 63 shows a substantial increase in arrests over the last biennium. During the biennium July 1, 1936 to June 30, 1938 there was a total of 439 arrests. During the biennium covered by this report, July 1, 1938 to June 30, 1940, there was a total of 643. This is an indication that the new men who were employed in 1937, following the reorganization, are now more accustomed to their duties and territories and know when and where to look for violators. The policy of only prosecuting wilful, deliberate or intentional violators has not changed. On page 65 there is a graph showing the number of arrests during the past ten years.

The policy of issuing warnings to unintentional law violators or where there are extenuating circumstances is still in force. During the biennium July 1, 1936 to June 30, 1938 a total of 1,060 warnings was issued. During the biennium covered by this report, July 1, 1938 to June 30, 1940 a total of 1,163 warnings were issued. On page 65 there is a graph showing the number of warnings issued since this policy was adopted.

## Sportsmen Checked

During the biennium wardens and patrolmen made contact in the field with 129,737 sportsmen. The table of sportsmen checked will be found on page 64.

## Field Trials

During the biennium wardens attended fifty-seven of the 141 field trials held, which were:

Type of Trial	Number	Type of Trial	Number
Fox and rabbit.....	2	Coon.....	39
Bird.....	63	Fox.....	5
Coon and Fox.....	32		

## Hunting and Angling Accidents

During the biennium there were eighteen accidents, eight of which were fatal. Three persons fell overboard while fishing and were drowned; one died from a fractured skull incurred through a fall while hunting; one from self-inflicted shotgun wounds while hunting; and three persons were killed by rifles in the hands of boys.

Statistics on the other ten accidents show that three were shotgun wounds received while hunting; one of which was self-inflicted; four

received self-inflicted rifle wounds, three while hunting and one while target shooting; three were shot by rifles in the hands of another, one while hunting, and two in unexplained circumstances.

Although there is constant publicity on this subject, with advice and pleas to use firearms with care and discretion, accidents still occur. The department will continue to repeat the plea that firearms be respected, they they be carried and handled with the greatest of care and caution. It is well to remember that ALL GUNS ARE LOADED.

### Deer Killed

The table of deer killed by all causes on page 23 shows that illegal killings have not decreased. It is interesting to note that a total of thirteen deer was killed by automobiles on the new Merritt Parkway.

### Patrolmen

Public hunting and fishing in this state is conducted on areas listed as follows:

Hunting	Fishing
STATE-OWNED	STATE-OWNED
STATE FORESTS	STATE FORESTS AND PARKS
STATE-LEASED	STATE-LEASED
PERMIT-REQUIRED	REGULATED
OTHER OPEN AREAS	OTHER OPEN STREAMS, LAKES AND PONDS

Hunting and fishing rights are acquired by lease and cooperative agreement conditioned upon adequate patrol. State-owned, State forests and other open areas, streams, lakes and ponds are patrolled by the full-time members of the warden service. State-leased, permit-required and regulated areas, streams, lakes and ponds are patrolled by Patrolmen. The period of their employment is three months during the open seasons only.

During the hunting season of 1938 there were twenty-seven State-leased and permit required shooting areas on which thirty patrolmen were employed. During the hunting season of 1939 there were twenty-six State-leased and permit required shooting areas on which twenty-five patrolmen were employed.

During the 1939 angling season fifteen patrolmen were employed to patrol and supervise fishing on State-leased and regulated streams and ponds.

During the 1940 angling season eighteen patrolmen were employed for the same purpose. Two of these patrolmen, one assigned to Candlewood Lake and one assigned to West Hill Pond, in addition to their regular patrol duties, collected fish scales and other data from the anglers using these waters. This information was requested by the Fish Division for the purpose of determining fish populations, growth rates and other pertinent matters necessary for pond management.

Following are the duties and responsibilities of patrolmen:

1. To work under the direction of the State Warden in charge of the District and be responsible directly to him.
2. To keep accurate records of the hours on duty, license numbers of sportsmen checked, and number and species of fish and game taken.
3. To make daily reports of activities on forms furnished by the department and turn same over weekly to the State Warden in charge of the District.
4. To distribute, check, collect and keep a record of permits used on permit-required hunting areas.
5. To assist in the posting, or removal of posters, on the stream, pond or area to which assigned.
6. To prepare maps of the stream, pond or hunting area to which assigned.
7. To assist in the building of shelters or feed stations, and distribute grain to same.
8. If authorized, to make arrests to enforce the State laws relating to fish and game and the regulations of the Board. If not authorized to make arrests, to enforce regulations only.
9. To use good judgment and initiative in handling all matters.
10. To approach all sportsmen and others in a pleasant manner and ask for the information required by the department with courtesy, yet with firmness and thoroughness.

### Cost of Warden Service

For several years past there has been considerable discussion by the individual license buyer, and at meetings of organized sportsmen concerning the cost of warden service. There have also been many newspaper articles published on this subject. Some writers have taken the total cost figure for warden service for one year, divided this by the number of arrests made in that period and have used the resulting figure to show the cost is excessive.

One of the principal reasons for the detailed explanation of a warden's duties and responsibilities in this report is the desire that the persons who pay the bill for this service be better informed.

Many sportsmen also feel that since license money alone supports the warden service, the members of this service should not be called upon

to enforce laws relating to the protection of birds and quadrupeds which may not be taken.

The species chiefly concerned is deer. For the calendar year 1939 there were 348 arrests of which 112, or 31 per cent of the total, involved deer violations. For the biennium there was a total of 643 arrests, of which 192, or 29.8 per cent of the total, involved deer violations.

There are many non-hunting landowners who would vigorously oppose destruction or non-protection of the deer herd. They and many others are thrilled with an occasional glimpse of these swift and graceful animals.

As discussed above, the warden service also performs other duties resulting in benefits to persons other than licensed sportsmen.

## CONCLUSION

The warden service as a unit extends sincere appreciation to all individuals, groups and organizations, for their cooperation in educational subjects at the warden school; in the daily efforts of the service to improve hunting, fishing and trapping; observance of the fish and game laws and regulations; and constructive criticisms resulting in more efficient effort.

## MEMBERS OF THE DIVISION OF WILDLIFE PROTECTION AND LAW ENFORCEMENT

Thomas E. Rose, Chief Warden  
Seth J. Monroe, State Warden  
Raymond E. Piaggi, State Warden  
Edward T. Bement, State Warden  
Thomas G. Daniels, State Warden  
Edward G. Wraight, State Warden  
George A. Willis, State Warden  
Harding F. Joray, State Warden  
John E. Wood, State Warden  
Charles H. Wells, Deputy Warden  
William B. Kibbe, Deputy Warden  
Alfred J. Hunyadi, Deputy Warden  
Albert G. Csech, Deputy Warden  
Donald N. Deane, Deputy Warden  
Eugene H. Johnson, Deputy Warden  
Lawrence W. Theiss, Deputy Warden  
James D. Healey, Deputy Warden  
Frederick E. Lord, Jr., Deputy Warden  
Douglas D. Moss, Deputy Warden  
John M. Smith, Jr., Deputy Warden  
Theodore Andersen, Deputy Warden  
Alfred M. Williams, Jr., Deputy Warden  
Louis M. Bayer, Deputy Warden  
Ralph H. Kenyon, Deputy Warden  
Miss Edith A. Stoehr, Deputy Warden  
Walter R. Palmer, Marine Warden

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1938, to June 30, 1939

District	Fish Law Arrests	Game Law Arrests	Total Arrests	Total Convictions	% of Convictions	Fines Paid	Costs Paid	Tot. Fines & Costs
No. 2 Hartford .....	31	35	66	52	79%	\$361.55	\$368.22	\$729.77
No. 3 New Haven.....	15	16	31	28	90%	169.00	225.48	394.48
No. 7 New London.....	6	8	14	13	93%	78.00	102.45	180.45
No. 4 Fairfield.....	9	26	35	35	100%	137.00	317.04	454.04
No. 6 Windham.....	14	24	38	37	97%	370.50	337.30	707.80
No. 1 Litchfield.....	28	37	65	63	97%	734.00	550.42	1,284.42
No. 8 Middlesex.....	10	24	34	34	100%	339.00	315.08	654.08
No. 5 Tolland.....	7	18	25	24	96%	79.00	199.28	278.28
<b>TOTALS.....</b>	<b>120</b>	<b>188</b>	<b>308</b>	<b>286</b>	<b>93%</b>	<b>\$2,268.05</b>	<b>\$2,415.27</b>	<b>\$4,683.32</b>

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1939, to June 30, 1940

District	Fish Law Arrests	Game Law Arrests	Total Arrests	Total Convictions	% of Convictions	Fines Paid	Costs Paid	Tot. Fines & Costs
No. 1 Litchfield.....	24	54	78	77	99%	\$1,112.00	507.59	\$1,619.59
No. 2 Hartford.....	20	21	41	37	90%	321.00	163.66	484.66
No. 3 New Haven.....	17	11	28	26	93%	92.00	198.22	290.22
No. 4 Fairfield.....	9	25	34	34	100%	196.80	240.08	436.88
No. 5 Tolland.....	5	18	23	21	91%	72.00	122.99	194.99
No. 6 Windham.....	7	48	55	48	87%	428.90	327.75	756.65
No. 7 New London.....	14	20	34	32	94%	131.80	189.11	320.91
No. 8 Middlesex.....	20	22	42	42	100%	386.96	290.63	677.59
<b>TOTALS.....</b>	<b>116</b>	<b>219</b>	<b>335</b>	<b>317</b>	<b>95%</b>	<b>\$2,741.46</b>	<b>\$2,040.03</b>	<b>\$4,781.49</b>

## SPORTSMEN CHECKED

July 1, 1938—June 30, 1939

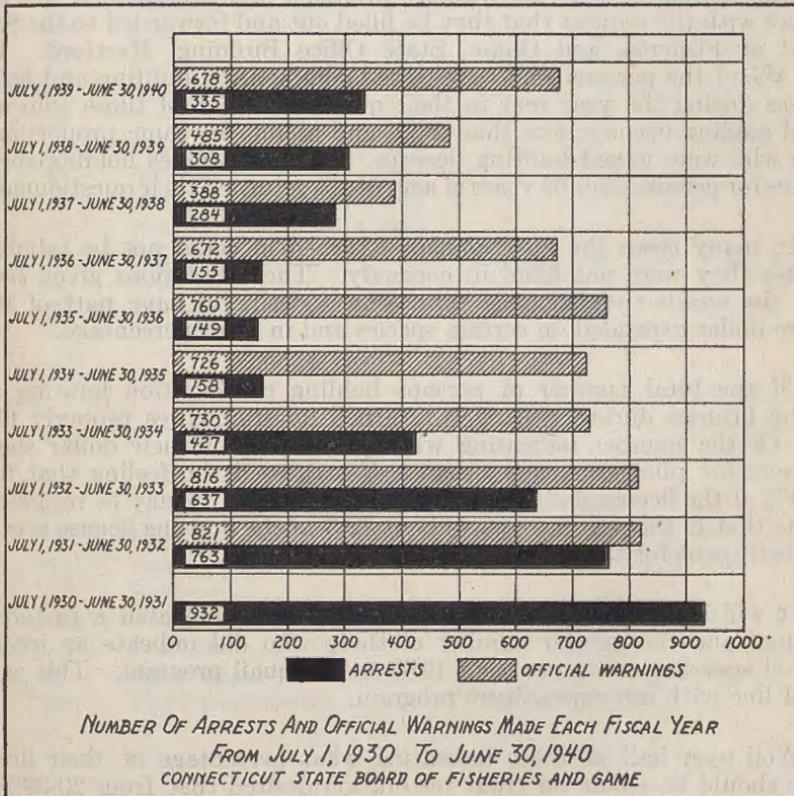
July 1, 1939—June 30, 1940

District	Sportsmen Checked by Wardens*		Sportsmen Checked by Patrolmen		Total No. Sportsmen Checked	
	1938-39	1939-40	1938-39	1939-40	1938-39	1939-40
1 (Litchfield).....	8,683	7,707	7,971	8,271	16,654	15,978
2. (Hartford).....	3,712	2,652	5,758	4,117	9,470	6,769
3. (New Haven).....	4,774	4,996	1,424	2,468	6,198	7,464
4 (Fairfield).....	5,837	8,538	2,808	2,566	8,645	11,104
5 (Tolland).....	3,563	3,250	3,111	3,340	6,674	6,590
6 (Windham).....	3,119	3,751	1,931	2,313	5,050	6,064
7 (New London).....	2,202	3,033	2,278	2,434	4,480	5,467
8 (Middlesex).....	2,981	4,505	2,519	3,125	5,500	7,630
	34,871	38,432	27,800	28,634	62,671	67,066

## \*Sportsmen Checked by Wardens

	1938-39	1939-40
Allshouse (to 9-30-39).....	1,380	190
Andersen.....	1,024	1,214
Bayer (from 12-7-38).....	1,222	2,467
Bement.....	277	361
Bishop (to 2-7-40).....	1,282	397
Csech (from 2-19-40).....	—	643
Daniels.....	800	3,077
Deane.....	1,211	1,154
Dineen (from 8-15-38 to 11-20-38).....	229	—
Healey.....	3,494	4,005
Hunyadi.....	1,761	1,783
Johnson.....	1,589	2,001
Joray.....	581	1,123
Kenyon.....	1,643	2,805
Kibbe.....	3,005	1,800
Lord.....	1,551	1,456
Monroe.....	1,578	1,574
Moss.....	1,560	737
Piaggi.....	1,357	1,339
Smith.....	1,598	1,506
Theiss.....	2,112	1,563
Wells.....	2,432	2,550
Williams.....	1,187	1,576
Willis.....	825	961
Wood.....	744	1,143
Wraight.....	429	1,007
	34,871	38,432

COMPILATION OF QUESTIONNAIRE RETURNS FROM LICENSED SPORTSMEN



## COMPILATION OF QUESTIONNAIRE RETURNS FROM LICENSED SPORTSMEN

In accordance with a law passed by the 1939 session of the General Assembly, the Superintendent of this Board was directed to prepare a questionnaire for license holders permitting them to express their preferences, on a percentage basis, as to how their license dollar should be spent.

Questionnaires were accordingly prepared and attached to the 1940 licenses with the request that they be filled out and forwarded to the State Board of Fisheries and Game, State Office Building, Hartford. Less than 4% of the persons who were issued combination hunting and fishing licenses during the year sent in their questionnaires; of those who were issued angling licenses, less than 2%; and about the same proportion of those who were issued hunting licenses. Of the licensees holding special licenses for persons over 65 years of age, 6½% returned their questionnaires.

In many cases the questionnaires turned in could not be tabulated because they were not filled in correctly. The tabulations given below show the number of licensees expressing a desire to have part of their license dollar expended on certain species and in what percentage.

Of the total number of persons holding combination hunting and angling licenses during 1940, 280 returned questionnaires properly filled out. Of the number indicating what percentage of their dollar should be spent for pheasants, more than half expressed the feeling that from 20-39% of the license dollar should be so expended. It may be interesting to note that in the past few years about 32% of the hunting license revenue has been spent for the pheasant restoration program.

It will also be noted that very few licensees indicated a preference for quail and the greater number of those who did indicate an interest favored spending not more than 19% on the quail program. This is not out of line with our expenditure program.

Well over half of those indicating what percentage of their license dollar should be spent on trout restoration desired that from 20-39% be spent on this program. During the past two years expenditures for the trout program have been approximately 36% of the angling license revenue received.

Over 50% of those expressing their views as to how much money should be spent on law enforcement registered an opinion that not more than 39% should be expended for this purpose. The total average expenditure for warden service in the past two years has been about 32% of the revenue received from hunting and fishing licenses.

## Returns From Combination Licenses

Total number reporting—280

No. of Licensees Reporting on Species Named	Species	Percentage of License Dollar to be Expended in Manner Named and Number of Licensees Expressing This Preference				
		1-19%	20-39%	40-59%	60-79%	80-100%
241	Pheasants.....	78	133	29	1	—
45	Quail.....	34	10	1	—	—
92	Grouse & Partridge...	69	19	3	1	—
72	Rabbits.....	55	15	2	—	—
12	Raccoon.....	9	3	—	—	—
108	Other game.....	67	37	4	—	—
259	Trout.....	69	140	43	2	5
84	Bass.....	64	19	—	—	1
11	Bullheads.....	11	—	—	—	—
49	Perch.....	44	5	—	—	—
61	Pickrel.....	56	4	1	—	—
8	Pond fishes.....	3	3	2	—	—
104	Other fishes.....	73	29	1	—	1
195	Law Enforcement....	46	120	21	4	4

## Returns From Angling Licenses

Total number reporting—485

436	Trout.....	23	134	160	63	56
129	Pickrel.....	60	57	11	1	—
187	Bass.....	43	111	26	4	3
16	Bullheads.....	9	5	2	—	—
121	Perch.....	57	55	8	1	—
5	Pond fishes.....	1	3	—	1	—
217	Other fishes.....	41	83	72	9	12
320	Law Enforcement....	87	184	44	4	1

## Returns From Hunting Licenses

Total number reporting—254

222	Pheasants.....	13	85	76	25	23
36	Quail.....	9	26	1	—	—
61	Grouse.....	19	32	9	—	1
40	Rabbits.....	10	19	9	1	1
9	Raccoon.....	4	4	—	—	1
122	Other game.....	13	42	53	7	7
162	Law Enforcement....	41	86	23	6	6

## Returns From Special Licenses Issued to Persons Over 65

Total number reporting—332

No. of Licensees Reporting on Species Named	Species	Percentage of License Dollar to be Expended in Manner Named and Number of Licensees Expressing This Preference				
		1-19%	20-39%	40-59%	60-79%	80-100%
192	Pheasants.....	56	102	28	3	3
47	Quail.....	34	13	—	—	—
45	Grouse.....	29	11	3	1	1
24	Rabbits.....	19	2	3	—	—
11	Raccoon.....	8	2	1	—	—
98	Other game.....	54	41	3	—	—
248	Trout.....	57	129	48	5	9
89	Bass.....	45	35	8	1	—
15	Bullheads.....	12	3	—	—	—
48	Perch.....	32	12	4	—	—
37	Pickrel.....	25	10	2	—	—
3	Pond fishes.....	2	1	—	—	—
138	Other fishes.....	60	52	16	5	5
155	Law Enforcement....	53	57	33	1	11

It is our opinion that the number of licensees reporting is not of a sufficiently large percentage of the total number of licensees to give a basis for dependable conclusions with regard to expenditures.

# Financial Statements

July 1, 1938—June 30, 1939

## MEANS OF FINANCING

### Working Balances—July 1, 1938

Game Fund.....	\$ 17,195.50
Inland Fish Fund.....	56,889.89
Marine Fish Fund.....	5,329.12

### Receipts from sale of hunting and angling licenses and other sources

Game Fund.....	81,759.80
Inland Fish Fund.....	105,182.25
Marine Fish Fund.....	3,436.50

### Appropriations

Administration.....	11,685.00
Protection and Propagation of Fish (Inland).....	4,500.00
Protection and Propagation of Marine Fishes.....	9,000.00
Acquisition and Maintenance of Fishing and Hunting Areas.....	20,526.00
Purchase of Egg-bearing Lobsters.....	4,500.00
Completion of Lobster Hatchery.....	6,939.00

**TOTAL CASH RESOURCES.....** \$326,943.06

## EXPENDITURES

### Division of Administration

Personal Services.....	\$ 20,409.17
Expenses of Board and Council.....	503.90
Expenses of Superintendent.....	1,765.81
Expenses of Office.....	2,977.87
	<u>(1)</u>
	\$ 25,656.75

### Division of Fish Restoration

#### Inland Fisheries

Supervision.....	\$ 10,484.15
Trout Restoration.....	39,643.25
Pond Fish Restoration.....	5,623.86
Shad Restoration.....	153.66
Maintenance of Boats.....	182.13
Purchase of licenses and buttons.....	1,320.13
Miscellaneous.....	81.90
	<u>(2)</u>
	\$ 57,489.08

#### Marine Fisheries

Salary and Expenses of Marine Warden.....	\$ 2,805.70
Lobster Restoration Program.....	6,633.59
Flatfish Restoration Program.....	261.06
Purchase of egg-bearing lobsters.....	2,584.47
Miscellaneous.....	271.26
	<u>(3)</u>
	\$ 12,556.08

**Division of Game Restoration**

Supervision .....	\$ 4,885.74
<b>Game Restoration and Restocking Program</b>	
Pheasants .....	28,239.94
Quail .....	2,050.68
Raccoon .....	754.39
Waterfowl .....	103.39
Feeding and planting .....	621.80
Other .....	714.58
Game Refuges .....	4,903.61
Purchase of licences and buttons .....	1,047.15
Miscellaneous .....	109.94
	<hr/>
	\$ 43,431.22

**Division of Law Enforcement**

Personal Service .....	\$ 45,580.83
Travel and other expenses .....	19,319.72
Equipment .....	3,952.10
	<hr/>
	\$ 68,852.65

**Land and Water Acquisition**

Patrol Service .....	\$ 9,652.00
Leases, recording fees, etc. ....	5,397.00
Permits, posters, etc. ....	2,279.63
Land purchase .....	1,950.00
	<hr/>
	\$ 19,278.63 <sup>(4)</sup>
New Lobster Hatchery at Noank .....	*\$ 13,517.00 <sup>(5)</sup>

**TOTAL EXPENDITURES** .....

\$240,781.41

**BALANCE** .....

\$ 86,161.65

\$326,943.06

\$326,943.06

Reverted to Treasury .....

789.95

\*This item is not included in chart expenditure figures. Constructed under supervision of Public Works Department. Figure represents department's contribution to cost.

**Working Balances Carried Over**

Game Fund .....	\$ 19,544.40
Inland Fish Fund .....	\$ 62,228.21
Marine Fish Fund .....	\$ 3,599.09

**Working Balances—**

In view of the fact that the department operates for the most part on license revenue it is necessary to maintain a substantial balance in license funds to permit operations of the department during periods of low income and to act as a safeguard in years when revenue may fall below estimates of income.

(1) \$ 11,685.00	Expended from Appropriations
(2) 4,489.87	"    "    "
(3) 9,557.55	"    "    "
(4) 19,278.63	"    "    "
(5) 11,349.00	"    "    "
<hr/>	
\$ 56,360.05	
789.95	Reverted to Treasury
<hr/>	
\$ 57,150.00	Total Appropriations

## FINANCIAL STATEMENT

July 1, 1939—June 30, 1940

## MEANS OF FINANCING

## Working Balances—July 1, 1939

Game Fund.....	\$ 19,544.40
Inland Fish Fund.....	62,228.21
Marine Fish Fund.....	3,599.09

## Receipts from sale of hunting and angling licenses and other sources

Game Fund.....	95,657.16
Inland Fish Fund.....	106,393.31
Marine Fish Fund.....	3,837.61
Appropriations.....	43,972.25

TOTAL CASH RESOURCES.....\$335,232.03

## EXPENDITURES

## Division of Administration

Personal Services.....	\$ 15,969.14
Expenses of Council.....	199.05
Expenses of Superintendent.....	430.46
Expenses of Office.....	1,589.88
	<hr/>
	\$ 18,188.53 <sup>(1)</sup>

## Division of Fish Restoration

## Inland Fisheries

Supervision.....	\$ 9,953.58
Trout Restoration.....	38,872.88
Pond Fish Restoration.....	6,062.85
Smelt Restoration.....	507.15
Stream Improvement.....	250.00
Maintenance of Boats.....	62.85
Purchase of licenses and buttons.....	1,309.50
Miscellaneous.....	104.47
	<hr/>
	\$ 57,123.28 <sup>(2)</sup>

## Marine Fisheries

Salary and Expenses of Marine Warden.....	\$ 2,433.11
Lobster Restoration Program.....	6,625.94
Flatfish Restoration Program.....	1,005.00
Purchase of egg-bearing lobsters.....	3,296.10
Miscellaneous.....	235.29
	<hr/>
	\$ 13,595.44 <sup>(3)</sup>

## Division of Game Restoration

Supervision.....	\$ 5,084.08
Game Restoration and Restocking Program	
Pheasants.....	28,861.75
Quail.....	1,911.00
Raccoon.....	481.28
Rabbits.....	199.80
Feeding and planting.....	548.35
Other.....	157.89
Game Refuges.....	668.94
Game Management.....	3,717.78
Purchase of licenses and buttons.....	1,149.00
Miscellaneous.....	256.10
	<u>\$ 43,035.97</u>

## Division of Law Enforcement

Personal Service.....	\$ 44,064.54
Travel and other expenses.....	12,077.23
Equipment.....	6,525.19
	<u>\$ 62,666.96</u>

## Land and Water Acquisition

Leases, recording fees, etc.....	\$ 9,391.51
Permits, posters, etc.....	1,705.10
Patrol Service.....	9,832.00
	<u>\$ 20,928.61</u>

TOTAL EXPENDITURES..... \$215,538.79

BALANCE..... \$119,693.24

\$335,232.03 \$335,232.03

Reverted to Treasury..... 2,677.13

## Working Balances Carried Over

Game Fund.....	\$ 39,322.22
Inland Fish Fund.....	72,925.59
Marine Fish Fund.....	4,768.30

## Working Balances—

In view of the fact that the department operates for the most part on license revenue it is necessary to maintain a substantial balance in license funds to permit operations of the department during periods of low income and to act as a safeguard in years when revenue may fall below estimates of income.

(1) \$ 18,016.79	Expended from Appropriations
(2) 1,254.68	"    "    "
(3) 10,927.04	"    "    "
(4) 11,096.61	"    "    "
<u>\$ 40,295.12</u>	
2,677.13	Reverted to Treasury
<u>\$ 43,972.25</u>	Total Appropriations

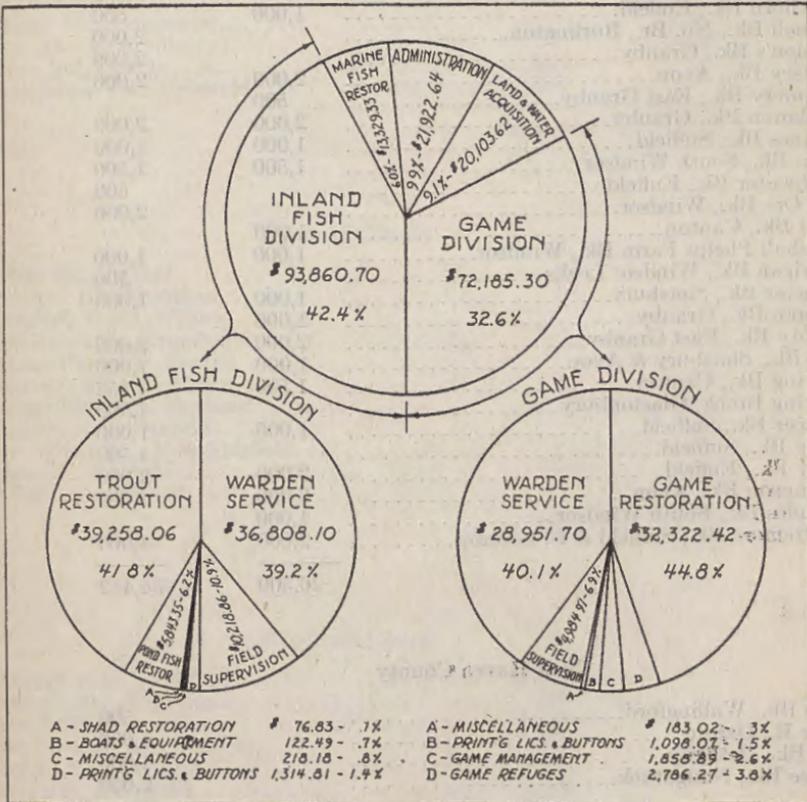
CONNECTICUT STATE BOARD OF FISHERIES AND GAME

CHART SHOWING

EXPENDITURES

JULY 1, 1938 — JUNE 30, 1940

BASED ON THE AVERAGE OF THE TWO FISCAL YEARS



# Distribution of Trout

1938—1939

## BROOK TROUT FINGERLING

### Hartford County

Name and Location of Water	1938	1939
Austin Bk., Suffield	1,000	1,000
Big Bk., Avon	1,000	1,000
Buckhorn Bk., Enfield	1,000	500
Bunnell Bk., No. Br., Burlington		2,000
Cannon's Bk., Granby		2,000
Chidsey Bk., Avon	2,000	2,000
Creamery Bk., East Granby	500	
Cuishman Bk., Granby	2,000	2,000
Devines Bk., Suffield	1,000	1,000
Farm Bk., South Windsor	1,500	1,500
Freshwater Bk., Enfield		500
Iron Ore Bk., Windsor		2,000
Jim's Bk., Canton	1,000	
Marshall Phelps Farm Bk., Windsor	1,000	1,000
Merrigan Bk., Windsor Locks		500
Minister Bk., Simsbury	1,000	1,000
Morgan Bk., Granby	1,000	
Muddy Bk., East Granby	2,000	2,000
Nod Bk., Simsbury & Avon	1,000	1,000
Roaring Bk., Canton	1,500	1,452
Roaring Brook, Glastonbury		1,500
Spencer Bk., Suffield	1,000	1,000
Stony Bk., Suffield		1,500
Terry Bk., Enfield	2,000	2,000
Thompson Bk., Avon	2,000	2,000
Whaples Bk., South Windsor	1,000	
Whittemore Bk., Suffield & E. Granby	2,000	4,000
	<hr/> 26,500	<hr/> 34,452

### New Haven County

Allen Bk., Wallingford	500
Little R., Oxford	1,000
Pine Bk., Bethany	1,000
Spruce Bk., Naugatuck	2,050
	<hr/> 4,550

### New London County

Austin Bk., Bozrah	1,500	
Bliven Bk., Voluntown	1,000	
Chapman Bk., Voluntown	1,900	
Cook's Bk., Voluntown	1,500	
Cranberry Meadow Bk., East Lyme		2,000

## New London County (Cont'd)

Name and Location of Water	1938	1939
Denison Bk., Voluntown.....	2,000	
Dixon Bk., Voluntown.....	1,500	
Graham Bk., Voluntown.....	1,500	
Horse Bk., Voluntown.....	1,500	
Jordan Bk., Waterford.....		2,400
Judd Bk., Colchester.....		1,500
Koistenen Bk., Voluntown.....	1,500	
Lowden Bk., Voluntown.....	4,354	
Mineral Spring Bk., Bozrah.....	2,500	
Mt. Misery Bk., Voluntown.....	1,900	
Pine Lot Bk., Voluntown.....	1,500	
Polly Bk., Bozrah.....	1,500	
Red Barn Bk., Voluntown.....	1,500	
Savitsky Bk., Colchester.....		1,000
Stony Bk., Montville.....		1,500
Tadma Bk., Bozrah.....	1,500	
Woodmansee Bk., Griswold.....	1,500	
	<hr/> 30,654	<hr/> 8,400

## Fairfield County

Dibbles Bk., Bethel.....	1,500
Morrissey Bk., Sherman.....	1,500
Moriarty's Pond, Wilton.....	5,000
Pequonnock R., Trumbull.....	2,000
Putnam Park Bk., Bethel.....	1,000
Roderick's Bk., Newtown.....	1,000
Scudder Bk., New Fairfield.....	1,000
Shadow Bk., Ridgefield.....	1,500
Short Wood Bk., New Fairfield.....	2,000
Titicus R., Ridgefield.....	1,000
Wolf Pit Bk., Bethel.....	1,500
	<hr/> 19,000

## Windham County

Bebbington Bk., Ashford.....	2,000	
Bradford Bk., Woodstock.....	500	
Brown's Bk., Sterling.....	1,500	
Cedar Swamp Bk., Sterling.....	1,500	
Crooked Bk., Sterling.....	2,000	
Davis Bk., Plainfield.....	1,500	
Dean Bk., Canterbury.....	2,000	
Dixon Bk., Sterling.....	1,500	
Gallup Bk., Plainfield.....	1,500	
Gardner Bk., Ashford.....	1,500	
Herridean Bk., Woodstock.....	1,000	
Horse Bk., Plainfield.....	2,000	
Knowlton Bk., Ashford.....	2,000	
Lipps Bk., Ashford.....	1,500	
Mashentuck Bk., Killingly.....	1,000	2,000
Mill Bk., Plainfield.....	2,000	
Monty Bk., Scotland.....	2,000	
Moritz Bk., Ashford.....	2,000	

## Windham County (Cont'd)

Name and Location of Water	1938	1939
Moss Bk., Woodstock .....	2,000	
Muddy Bk., Woodstock .....	2,000	
North Potter Bk., Sterling .....	1,500	
Potash Bk., Windham .....	1,500	
Smith Bk., Canterbury .....	2,000	
Squaw Hollow Bk., Ashford .....	1,500	
Titus Bk., Sterling .....	1,500	
	<hr/>	<hr/>
	41,000	2,000

## Litchfield County

Bee Bk., Washington .....	3,000	3,000
Butternut Bk., Litchfield .....	2,500	3,000
Camp Bk., Roxbury .....		1,000
Jacks Bk., Roxbury .....		1,000
Kent Falls Bk., Kent .....	2,500	
Lake Waramaug Bk., Warren .....	3,000	3,000
Lenevig Bk., Roxbury .....	3,000	3,000
Mallory Bk., Washington .....	3,000	3,000
Marshepaug R., Litchfield & Goshen .....	2,000	
Moosehorn Bk., Roxbury .....		2,000
Morgan Bk., New Hartford .....		3,000
Naugatuck R., E. Br., Torrington .....		3,000
Naugatuck R., W. Br., Norfolk .....		2,000
Nylbs Bk., Morris .....		2,000
Pine Swamp Bk., Sharon .....	2,000	
Potter Bk., Cornwall .....	2,000	3,000
Roxbury Bk., Roxbury .....		1,000
Shears Bk., Morris & Washington .....		2,000
Shepaug R., E. Br., Goshen .....	3,000	3,000
Spalding Bk., Norfolk .....		2,000
Sprain Bk., Woodbury .....		2,000
Toby Pond Bk., Norfolk .....		2,000
Torrill Bk., Roxbury .....		1,000
Viningram Bk., Washington .....		2,000
Wangum Lake Bk., Canaan .....		3,000
West Norfolk Bk., Norfolk .....		3,000
Wickwire Bk., Canaan .....	2,000	
	<hr/>	<hr/>
	28,000	53,000

## Middlesex County

Baroni's Bk., Haddam .....		500
Half Way Bk., Haddam .....		500
Kriegers Bk., Haddam .....		500
Pole Bridge Bk., Haddam .....		1,000
Ponset Bk., Haddam .....		1,000
Turkey Hill Bk., Haddam .....		500
		<hr/>
		4,000

## Tolland County

Name and Location of Water	1938	1939
Abbey Bk., Somers.....	1,284	
Alden Bk., Stafford.....		1,500
Bahler's Bk., Ellington.....	1,000	1,000
Bolton Pond Bk., Bolton.....	500	500
Bone Mill Bk., Ellington.....	1,000	
Bowler's Bk., Tolland.....		1,000
Brooks Bk., Tolland.....		1,000
Cedar Swamp Bk., Stafford.....		1,000
Cemetery Bk., Tolland.....	1,500	2,000
Charter's Bk., Tolland.....	1,500	1,500
Clark's Bk., Vernon.....	1,000	1,000
Codfish Falls Bk., Mansfield.....	500	
Conant Bk., Mansfield.....	500	
Crystal Lake Bk., Stafford.....	1,000	1,000
George's Bk., Willington.....	1,000	1,000
Grapevine Bk., Tolland.....	1,000	1,000
Gulf Stream, Somers.....	1,000	1,500
Hop R., Bolton.....	900	
Kalis Bk., Tolland.....	1,000	1,000
Kimball's Bk., Ellington.....	1,000	1,000
Macht Bk., Columbia.....		1,000
May's Bk., Union.....	1,000	
McIntyre's Bk., Stafford.....	1,000	1,000
Muddy Bk., Ellington.....	2,500	2,500
Ogden Bk., Vernon.....		1,000
Pease Bk., Somers.....		1,000
Pecks Bk., Ellington.....	1,000	
Polk Hill Bk., Tolland.....	1,000	1,000
Raymond Bk., Hebron.....		1,000
Salmon R., Hebron.....		500
Saw Mill Bk., Mansfield.....	500	
Schanade Bk., Somers.....	1,500	
Staddle Bk., Andover.....	2,300	1,400
Tancanhoosen Bk., Vernon.....	1,000	
Thrasher Bk., Somers.....		500
Town Bk., Vernon & Tolland.....	2,846	2,500
Watchaug Bk., Somers.....	2,000	
Weaver Bk., Mansfield.....	1,500	
Woods Stream, Somers.....	1,500	
	<hr/>	<hr/>
	35,330	30,400
Total No. Brook Trout Fingerling.....	161,484	155,802

## BROOK TROUT ADULTS

## One Year

## Hartford County

Buckhorn Bk., Enfield.....	150	300
Bunnell Bk., No. Br., Burlington.....	250	542
Burlington Bk., Burlington.....		75
Cannons Bk., Suffield & Granby.....	250	800
Cherry Bk., Canton.....	200	250

## Hartford County (Cont'd)

Name and Location of Water	1938	1939
Cold Bk., Glastonbury.....	100	100
Copper Mine Bk., Burlington & Bristol.....	300	225
Dark Hollow Bk., Glastonbury.....	100	100
Farmington R., E. Br., Hartland.....	400	
Freshwater Bk., Enfield.....	400	500
Hatchery Bk., Berlin.....	200	200
Iron Ore Bk., Windsor & Bloomfield.....	50	50
Johnsons Bk., South Windsor.....	75	75
Ketch Bk., East Windsor.....	200	200
Kettle Bk., Windsor Locks.....	150	150
Mill Bk., Windsor.....	75	175
Podunk R., South Windsor.....	150	300
Roaring Bk., Glastonbury.....	50	550
Salmon Bk., Glastonbury.....	100	100
State Line Bk., Suffield.....	100	100
Stony Bk., Suffield & East Granby.....	200	200
Stratton Bk., Simsbury.....	500	500
Whaples Bk., South Windsor.....	25	25
	<hr/>	<hr/>
	4,025	5,517

## New Haven County

Bladens R., Woodbridge, Bethany & Seymour...	275	494
Cotton Hollow Bk., Naugatuck.....	400	1,000
Eight Mile Bk., Southbury, Middlebury & Oxford	1,100	1,600
Hancock Bk., Waterbury.....		200
Hop Bk., Middlebury & Naugatuck.....	450	1,481
Hopp Bk., Bethany.....	75	550
Little R., Oxford & Seymour.....	300	1,100
Long Meadow Bk., Middlebury.....		100
Long Meadow Pond Bk., Naugatuck.....	150	150
Prospect Street Bk., Naugatuck.....	100	350
Shattuck Bk., Middlebury.....	100	100
Wepawaug R., Woodbridge.....		250
	<hr/>	<hr/>
	2,950	7,375

## New London County

Anguilla Bk., Stonington.....	500	425
Copp's Bk., Stonington.....	250	300
Denison Bk., Voluntown.....	200	700
Exeter Bk., Lebanon.....		100
Great Meadow Bk., Voluntown.....	500	500
Hetchell Swamp Bk., No. Stonington.....	150	
Hunts Bk., Waterford.....	150	150
Jordan Bk., Waterford.....	300	300
Judd Bk., Colchester & Hebron.....	50	100
Latimer Bk., Montville & East Lyme.....	600	700
McCarthy's Bk., Franklin.....	200	200
McGuire Bk., Groton.....	150	175
Meadow Bk. Colchester.....	345	350
Mountain Bk., Franklin.....	100	100

## New London County (Cont'd)

Name and Location of Water	1938	1939
Oxoboxo Bk., Montville.....		50
Pachaug R., Voluntown.....	275	300
Palmer Bk., Griswold.....	100	100
Pease Bk., Lebanon.....	150	175
Pendleton Hill Bk., No. Stonington.....	275	400
Shunock Bk., No. Stonington.....	500	500
Stony Bk., Montville.....	275	400
Susquetonscut Bk., Lebanon & Franklin.....	450	500
Ten Mile R., Lebanon & Columbia.....	450	1,000
Trading Cove Bk., Norwich, Montville & Bozrah	750	1,250
Whitfords Bk., Stonington, Ledyard & Groton...	250	350
	<hr/>	<hr/>
	6,970	9,125

## Fairfield County

Ball Pond Bk., New Fairfield.....	450	750
Boys Halfway R., Monroe.....	200	200
East Swamp Bk., Danbury & Bethel.....	200	200
Harvey Pete Bk., Shelton.....		100
Lime Kiln Bk., Bethel.....	700	800
Mill R., Easton & Fairfield.....	400	400
Pond Bk., Newtown.....	500	600
Pootatuck R., Newtown.....	500	700
Rippowan R., Stamford.....		400
Saugatuck R., Redding.....	300	
Short Wood Bk., New Fairfield.....	200	
Titicus R., Ridgefield.....	700	1,000
	<hr/>	<hr/>
	4,150	5,150

## Windham County

Bungee Bk., Eastford & Woodstock.....	400	500
Herridean Bk., Woodstock.....	150	50
Kitt Bk., Canterbury.....	600	700
Mashamoquet Bk., Pomfret & Killingly.....	400	500
Muddy Bk., Woodstock.....	300	450
Nightingale Bk., Pomfret & Woodstock.....	150	100
Quaduck Bk., Sterling.....	800	900
Snake Meadow Bk., Plainfield & Killingly.....		825
Taylor Bk., Woodstock.....	150	200
	<hr/>	<hr/>
	2,950	4,225

## Litchfield County

East Aspetuck R., Washington & New Milford..	1,200	1,500
Bantam R., Outlet, Litchfield & Morris.....	950	1,000
Bantam R., W. Br., Goshen.....	100	100
Beaver Bk., Barkhamsted.....	400	500

## Litchfield County (Cont'd)

Name and Location of Water	1938	1939
Branch Bk., Watertown & Thomaston.....	300	300
Cider Mill Bk., Bridgewater.....	200	250
Hancock Bk., Plymouth & Waterbury.....	700	600
Lake Waramaug Bk., Warren.....	350	300
Mad R., Winchester.....	300	300
Marshpaug R., Goshen & Litchfield.....	300	200
Mill Bk., Winchester & Colebrook.....	200	150
Mill Bk., Sharon.....		200
Morgan Bk., Barkhamsted & New Hartford....	300	400
Morrissey Bk., New Milford.....	200	200
Naugatuck R., E. Br., Torrington and Winchester	200	200
Naugatuck R., W. Br., Torrington.....	200	200
Nepaug R., New Hartford.....	400	200
Northfield Bk., Litchfield & Thomaston.....	150	150
Riga Bk., Salisbury.....	250	200
Shepaug R., E. Br., Goshen.....		1,150
Spruce Swamp Bk., Salisbury.....	150	150
Ten Mile R., Sharon.....		50
Wangum Lake Bk., Canaan.....	150	200
	<hr/>	<hr/>
	7,000	8,500

## Middlesex County

Allyn's Bk., Durham.....	100	100
Asmunds Bk., Durham.....	75	75
Balls Bk., Durham.....	150	150
Beaver Bk., Haddam.....		400
Bible Rock Bk., Middletown & Haddam.....	150	250
Boones Bk., Westbrook.....	75	75
Buck Bk., Portland.....	75	75
Candlewood Hill Bk., Haddam.....	90	250
Carr Bk., Portland.....	125	100
Cox Bk., Portland.....	200	250
Deep R., Saybrook.....	150	250
Fowler Bk., Durham.....	100	100
Great Bk., Chester.....	175	175
Green R., East Hampton.....	100	100
Hales Bk., Portland.....	100	100
Hammer Shop Bk., Cromwell.....	100	200
Hersig Bk., Durham.....	75	75
Mine Bk., East Hampton.....	75	75
Muddy Bk., East Haddam.....	100	100
Muddy Gutter Bk., East Hampton.....	125	100
Parmalee Bk., Durham.....	275	250
Patchogue Bk., Westbrook.....	135	150
Pine Bk., Haddam.....	150	175
Ponset Bk., Haddam.....	250	275
Reservoir Bk., Portland.....	300	250
Saw Mill Bk., Durham.....	150	100
Summer Bk., Middletown & Durham.....	50	50
Trout Bk., Westbrook.....	250	225
Wadsworth Bk., Durham.....	75	75
	<hr/>	<hr/>
	3,775	4,550

Tolland County

Name and Location of Water	1938	1939
Abbey Bk., Somers.....	300	200
Alden Bk., Stafford.....	275	400
Avery Bk., Somers.....		300
Crystal Lake Bk., Stafford.....	600	700
Eagleville Bk., Mansfield.....	100	100
Gulf Stream, Somers.....	400	550
Hop R., Bolton, Andover & Coventry.....	750	1,000
Macht Bk., Columbia.....	350	300
May's Bk., Union.....	150	
Pecks Bk., Ellington.....	400	400
Raymond Bk., Hebron.....	355	400
Skungamaug R., Tolland & Coventry.....	1,150	2,200
Tacanhosens R., Vernon.....	700	1,200
Thrasher Bk., Somers.....	100	100
Tucker Bk., Vernon.....	100	100
	<hr/>	<hr/>
	5,730	7,950
No. of One Year Brook Trout Adults Planted in Streams Other Than State-controlled.....	37,550	52,392

BROOK TROUT ADULTS

Two Year

Reservoir Bk., Portland.....	25
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BROWN TROUT FINGERLING

New London County

Albert Hoxie Bk., Lebanon.....	1,500	
Day Bond Bk., Colchester.....		1,000
Four Mile R., East Lyme.....		2,000
Gardner Bk., Bozrah.....		1,700
Hetchell Swamp Bk., No. Stonington.....	5,500	
Hoxie Bk., Lebanon.....		1,700
Indiantown Bk., Preston.....		2,000
Pease Bk., Lebanon & Bozrah.....	5,500	1,500
Pendleton Hill Bk., No. Stonington.....	5,500	5,000
Wolf Bk., Colchester.....		1,000
Wyassup Bk., No. Stonington.....	4,000	
	<hr/>	<hr/>
	22,000	15,900

Windham County

Angell Bk., Plainfield.....		1,000
Angell Bk., Pomfret & Woodstock.....		1,500
Attawaugan Bk., Killingly.....	1,500	2,000
Bennett Bk., Canterbury.....	1,500	1,000
Cady Bk., Putnam.....	1,500	3,000
Coffey Bk., Canterbury.....	1,500	1,000
Cold Bk., Windham.....	1,500	
Cold Spring Bk., Brooklynn.....	1,500	2,000

## Windham County (Cont'd)

Name and Location of Water	1938	1939
Creamery Bk., Brooklyn.....	1,500	3,000
Darby Bk., Canterbury.....	1,500	1,000
Kelly Bk., Killingly.....	1,500	2,000
LaBelle Bk., Killingly.....	1,500	
Mary Brown Bk., Putnam.....	1,500	3,500
Masons Bk., Brooklyn.....	1,500	2,000
Mill Bk., Plainfield.....		6,000
Packerville Bk., Canterbury.....	1,500	1,000
Spencer Pond Bk., Windham.....	1,500	1,000
Sugar Bk., Plainfield.....	1,500	3,000
Tatnic Bk., Brooklyn & Canterbury.....	1,500	3,500
	<u>24,000</u>	<u>37,500</u>

## Litchfield County

Carsh Bk., Sharon.....	4,000	4,065
Furnace Bk., Cornwall.....	6,000	3,000
Riga Bk., Salisbury.....	3,000	3,000
	<u>13,000</u>	<u>10,065</u>

## Middlesex County

Camp Stuart Bk., East Hampton.....	2,000
Hans Bk., Middlefield.....	2,000
Muddy Bk., East Haddam.....	3,000
	<u>7,000</u>

## Tolland County

Schanade Bk., Somers.....		1,293
Total No. Brown Trout Fingerling.....	66,000	64,758

## BROWN TROUT ADULTS

## One &amp; Two Year

## Hartford County

	1938 One Year	1938 Two Year	1939 Two Year
Roaring Bk., Glastonbury.....		200	300
Scantic R., East Windsor.....		300	250
State Line Bk., Suffield.....	4,401		
Stony Bk., East Granby.....	2,000		
	<u>6,401</u>	<u>500</u>	<u>550</u>

## New London County

Burgess Bk., Lebanon.....	1,000		
Day Pond Bk., Colchester.....	1,000		
Four Mile R., East Lyme.....		250	300
Gardner Bk., Bozrah.....	1,500		
Hoxie Bk., Lebanon.....	1,500		

## New London County (Cont'd)

Name and Location of Water	1938	1938	1939
	One Year	Two Year	Two Year
Indiantown Bk., Preston & Ledyard.....		200	100
Oxoboxo Bk., Montville.....		100	
Pendleton Hill Bk., No. Stonington.....		50	
Savitsky Bk., Colchester.....	400		
Stickbridge Bk., Franklin.....	1,000		
Susquetonscut Bk., Franklin.....		50	
Wolf Bk., Colchester.....	600		
Wyassup Bk., No. Stonington.....		100	
	<u>7,000</u>	<u>750</u>	<u>400</u>

## Windham County

Attawaugan Bk., Killingly.....	1,000		
Bennett Bk., Canterbury.....	1,000		
Cady Bk., Putnam.....	1,000		
Coffey Bk., Canterbury.....	1,190		
Cold Bk., Windham.....	1,000		
Cold Spring Bk., Brooklyn.....	810		
Creamery Bk., Brooklyn.....	1,000		
Darby Bk., Canterbury.....	1,000		
Kelley Bk., Killingly.....	1,000		
LaBelle Bk., Killingly.....	1,000		
Mary Brown Bk., Putnam.....	1,000		
Masons Bk., Brooklyn.....	1,000		
Packerville Bk., Canterbury.....	1,000		
Quinebaug R., Brooklyn & Canterbury.....		1,200	1,000
Spencer Pond Bk., Windham.....	1,000		
Sugar Bk., Plainfield.....	1,000		
Tatnic Bk., Canterbury.....	1,000		
	<u>16,000</u>	<u>1,200</u>	<u>1,000</u>

## Litchfield County

Carsh Bk., Sharon.....	2,575		
Furnace Bk., Cornwall.....	2,000		
	<u>4,575</u>		

## Middlesex County

Camp Stuart Bk., East Hampton.....	1,000		
Elbow Bk., East Hampton.....	1,000		
	<u>2,000</u>		

## Tolland County

Avery Bk., Somers.....		1,888	
Henderson Bk., Tolland.....	1,500		
Hockanum R., Vernon & Ellington.....		250	200
Hop R., Bolton, Andover & Coventry.....			250
Middle R., Stafford.....		350	300
	<u>1,500</u>	<u>2,488</u>	<u>750</u>
No. of Brown Trout Adults Planted in Streams Other Than State-controlled.....	37,476	4,938	2,700

## RAINBOW TROUT FRY

## Hartford County

Name and Location of Water	1938	1939
Burlington Bk., Burlington.....	11,753	

## RAINBOW TROUT FINGERLINGS

## New Haven County

Quassapaug Pond, Middlebury.....		4,000
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## New London County

Gardner Bk., Norwich.....	1,093	834
Gardner Bk., Bozrah.....	3,400	1,000
Pease Bk., Bozrah & Lebanon.....	1,577	2,500
Ten Mile R., Lebanon & Columbia.....	5,000	6,500
	<hr/>	<hr/>
	11,070	10,834

## Fairfield County

Ball Pond Bk., New Fairfield.....		6,965
Deep Hollow Bk., New Fairfield.....	1,500	1,500
Greenwoods Bk., Sherman.....	1,500	1,500
Greenwoods Bk., So. Br., Sherman.....	1,500	1,500
	<hr/>	<hr/>
	4,500	11,465

## Windham County

Beaver Dam Bk., Eastford.....	5,120	5,000
Darling Pond Bk., Chaplin.....	2,000	1,000
Reed Bk., Chaplin.....	2,000	
Stone House Bk., Chaplin.....		2,000
Sugar Bk., Plainfield.....	5,000	4,000
Turner Bk., Chaplin.....	2,000	
	<hr/>	<hr/>
	16,120	12,000

## Litchfield County

West Hill Pond, New Hartford.....		5,065
Total No. Rainbow Trout Fingerling.....	31,690	43,364

## RAINBOW TROUT ADULTS

## One &amp; Two Year

## New London County

	One Year 1938	Two Year 1938	Two Year 1939
Judd Bk., Colchester.....	2,451		
Pease Bk., Lebanon.....	923		
	<hr/>		
	3,374		

## Fairfield County

Ball Pond Bk., New Fairfield.....		150	300
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# Distribution in State-controlled Waters

## BROOK TROUT ADULTS

### One & Two Year

Name and Location of Water	1938	1938	1939	1939
	1 Year	2 Year	1 Year	2 Year
Beaver Bk., Franklin & Sprague.....	900	—	1,250	—
Bigelow Bk., Eastford.....	700	—	1,550	—
Blackberry R., No. Canaan & Norfolk.....	1,600	—	1,700	—
Blackledge R., Marlboro & Colchester.....	1,480	150	2,200	500
Blackwells Bk., Brooklyn & Canterbury.....	450	—	1,325	—
Branford R., Branford & No. Branford.....	900	50	1,300	75
Broad Bk., Ellington.....	1,100	—	2,250	—
Chatfield Hollow Bk., Killingworth.....	1,000	—	1,200	—
Coginchaug R., Durham.....	625	—	700	—
Dickenson Creek, Colchester.....	150	—	200	—
Farm R., E. Haven & No. Branford.....	—	—	990	—
Farmington R., Simsbury, Avon, Canton, Farmington & New Hartford.....	—	—	350	90
Farmington R., W. Br., Colebrook, Barkhamsted & New Hartford.....	3,700	600	5,300	910
Fenton R., Mansfield.....	3,000	375	3,720	200
Housatonic R., Cornwall & Sharon.....	2,100	807	3,600	2,700
Jeremy's R., Colchester.....	700	—	800	—
Kent Falls Bk., Kent.....	400	—	1,200	—
Little R., Canterbury & Scotland.....	700	—	1,000	—
Macedonia Bk., Kent.....	1,100	—	2,600	—
Mill R., Hamden.....	750	—	700	—
Mount Hope R., Mansfield & Ashford.....	900	50	1,000	75
Mount Misery Bk., Voluntown.....	850	100	1,900	50
Muddy R., Wallingford, No. Branford & No. Haven.....	700	—	900	—
Myron Kinnie Bk., Voluntown.....	1,247	100	1,700	50
Natchaug R., Eastford & Chaplin.....	1,450	580	3,300	500
Norwalk R., Wilton & Norwalk.....	50	—	1,350	—
Pequonnock R., Monroe & Trumbull.....	1,275	200	3,400	100
Philips Pond, Voluntown.....	150	—	453	—
Pomperaug R., Woodbury & Southbury.....	1,000	350	2,100	500
Quinnipiac R., Southington.....	800	100	750	100
Roaring Bk., Stafford & Willington.....	3,085	200	4,000	200
Salmon Bk., E. Br., Granby.....	800	—	2,200	—
Salmon Bk., W. Br., Granby.....	100	—	200	—
Salmon R., Colchester, E. Haddam & E. Hampton.....	1,300	150	1,550	1,000
Sandy Bk., Colebrook.....	900	100	1,400	100
Scantic R., Somers.....	2,375	200	3,250	250
Shepaug R., Southbury & Roxbury.....	575	—	1,950	—
Snake Meadow Bk., Killingly & Plainfield.....	2,000	—	600	—
Weekeepemee R., Woodbury.....	450	—	550	—
Whiting R., No. Canaan.....	100	—	100	—

No. of Brook Trout Adults Planted in State-controlled Waters:.....	41,462	4,112	66,588	7,400
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## BROWN TROUT ADULTS

Two Year

Name and Location of Water	1938	1939
Blackledge R., Marlboro & Colchester.....	913	388
Blackwells Bk., Brooklyn & Canterbury.....	1,300	700
Coginchaug R., Durham.....	285	200
Eight Mile R., East Haddam.....	700	700
Farm R., E. Haven & No. Branford.....	1,000	600
Farmington R., Simsbury, Avon, Farmington, Canton, New Hartford and E. Granby.....	1,617	950
Farmington R., W. Br., Barkhamsted, Colebrook & New Hartford.....	1,500	100
Farmington R., Bloomfield.....	425	—
Housatonic R., Sharon, Cornwall, Bridgewater & Southbury....	4,010	3,400
Jeremy's R., Colchester.....	450	200
Mill R., Hamden.....	—	400
Muddy R., No. Haven, No. Branford, Wallingford.....	1,000	500
Norwalk R., Norwalk & Wilton.....	1,550	800
Pequonnock R., Trumbull & Bridgeport.....	960	450
Pomperaug R., Southbury.....	1,000	500
Quinnipiac R., Cheshire, Meriden & Southington.....	800	300
Salmon Bk., E. Br., Granby.....	300	200
Salmon R., Colchester, E. Haddam & E. Hampton.....	5,000	1,337
Scantic R., Somers.....	—	753
Shepaug R., Roxbury & Southbury.....	900	725
Willimantic R., Willington & Mansfield.....	2,295	1,608
Yantic R., Bozrah & Lebanon.....	1,340	1,000
No. of Brown Trout Adults Planted in State-controlled Waters.....	27,345	15,811

## RAINBOW TROUT ADULTS

Two Year

Blackledge R., Marlboro & Colchester.....	205	650
Black Rock Pond, Watertown.....	100	—
Bragg Pond, Hartland.....	100	—
Cream Hill Pond, Cornwall.....	150	1,575
Farmington R., Bloomfield.....	85	—
Farmington R., Avon, Simsbury, East Granby, New Hartford, Canton & Farmington.....	415	1,600
Farmington R., W. Br., Barkhamsted, New Hartford & Colebrook	—	750
Green Falls Reservoir, Voluntown.....	4,027	—
Hodge Pond, Voluntown.....	44	—
Housatonic R., Sharon, Cornwall and Bridgewater.....	2,050	2,150
Little R., Canterbury.....	50	—
Moriarity's Pond, Wilton.....	450	475
Muddy R., Wallingford & No. Haven.....	—	300
Natchaug R., Eastford & Chaplin.....	1,260	1,100
Norwalk R., Norwalk.....	—	180

## RAINBOW TROUT ADULTS (Cont'd)

Two Year

Name and Location of Water	1938	1939
Pequonnock R., Trumbull.....	—	100
Pomperaug R., Southbury.....	500	950
Quassapaug Lake, Middlebury.....	3,000	3,200
Quinnipiac R., Meriden & Cheshire.....	—	500
Salmon R., Colchester, E. Haddam & E. Hampton.....	1,190	1,150
Scantic R., Somers.....	500	—
Schreeder Pond, Killingworth.....	25	75
Shepaug R., Roxbury & Southbury.....	150	300
Stillwater Pond, Torrington.....	3,000	—
Trumbull Reservoir, Trumbull.....	550	550
West Hill Pond, New Hartford.....	1,000	2,743
Wononscopomuc Lake, Salisbury.....	2,000	3,700
Yantic R., Bozrah & Lebanon.....	455	1,050
No. of Rainbow Trout Adults Planted in State-controlled Waters.....	21,306	23,098
<b>TOTAL NO. OF TROUT PLANTED.....</b>	<b>448,665</b>	<b>*432,213</b>

\*In addition to this figure 5,000 lake trout fingerling were received from the State of Vermont and planted in Lake Wononscopomuc, town of Salisbury.

## SUMMARY STATEMENT OF TROUT PLANTED

Fry	1938	1939
Rainbow Trout.....	11,753	—
<b>Fingerling</b>		
Brook Trout.....	161,484	155,802
Brown Trout.....	66,000	64,758
Rainbow Trout.....	31,690	43,364
	259,174	*263,924
<b>Adults Planted in State-controlled Waters</b>		
Brook Trout—1 yr.....	41,462	66,588
Brook Trout—2 yr.....	4,112	7,400
Brown Trout—2 yr.....	27,345	15,811
Rainbow Trout—2 yr.....	21,306	23,098
	94,225	112,897
<b>Adults Planted in Other Waters</b>		
Brook Trout—1 yr.....	37,550	52,392
Brook Trout—2 yr.....	25	—
Brown Trout—1 yr.....	37,476	—
Brown Trout—2 yr.....	4,938	2,700
Rainbow Trout—1 yr.....	3,374	—
Rainbow Trout—2 yr.....	150	300
	83,513	55,392

## SUMMARY STATEMENT OF TROUT PLANTED (Cont'd)

Total Adults Planted	1938	1939
Brook Trout—1 yr.....	79,012	118,980
Brook Trout—2 yr.....	4,137	7,400
Brown Trout—1 yr.....	37,476	—
Brown Trout—2 yr.....	32,283	18,511
Rainbow Trout—1 yr.....	3,374	—
Rainbow Trout—2 yr.....	21,456	23,398
	177,738	168,239
TOTALS OF ALL TROUT PLANTED.....	448,665	*432,213

\*In addition to this figure, 5,000 lake trout fingerling were received from the State of Vermont and planted in Lake Wononscopomuc, town of Salisbury.

## Distribution of Fishes to Lakes and Ponds

SEASON OF 1938

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Amos Lake					14,000		500
Preston							
Ball Pond	12	800		2,000	2,440	400	
New Fairfield	(White) 1,000						
Bantam Lake	14	97	23 S.M.	32			9
Litchfield							
Basham Lake					900		
East Haddam							
Besseck Lake	350	8,000			7,075	4,500	2,500
Middlefield							
Big Pond				500			
Windham							
Black Pond	25	1,051			3,367		
Middlefield							
Black Pond				1,000			
Woodstock							
Bolton Notch Pond		575		38	2,000		500
Bolton							
Burr Reservoir	31	181	17 L.M.	15	4,600		
Torrington							
Candlewood Lake	3	721	18 L.M.	5,077	5,360	12,100	
New Fairfield & Danbury	(White) 692						
Case's Pond					1,100		
Andover							

## DISTRIBUTION OF FISHES TO LAKES AND PONDS

(Cont'd)

SEASON OF 1938

Name of Water Stocked	Pickerel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Cedar Swamp Pond Bristol & Wolcott		500			6,000	4,500	
Columbia Reservoir Columbia		2,235		208		7,200	
Corner Pond Danbury				500			
Curtiss Pond Newtown				500			
Crystal Lake Stafford				2,000			
Crystal Lake Woodstock				1,000			
Day Pond Colchester		191			2,234	250	
Fulton Park Pond, Upper Waterbury		240		36	89		
Gardner Lake Salem & Montville	9						
Gilbert's Pond Newtown				500			
Glasgo Pond Griswold					6,000	13,000	308
Great Hill Pond Portland					1,100		
Hatch Pond Kent					1,000		
Highland Lake Winchester	24	691		18	5,100		
Hitchcock Lake Wolcott				2,000	500		
Hopeville Pond Griswold		174			6,000	13,000	124
Kenosha Lake Danbury				2,000	1,000		
Kenyonville Pond Woodstock				500			
LeCourts Pond East Hartford		301		61	164		
Lindsley Pond North Branford					1,000	4,000	
Long Meadow Pond Middlebury				2,000	1,000	4,000	

## DISTRIBUTION OF FISHES TO LAKES AND PONDS (Cont'd)

SEASON OF 1938

Name of Water Stocked	Pickerel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Long Pond Ledyard & North Stonington					6,200	5,000	400
Manitook Lake Granby		302		447	3,080	8,000	45
Moodus Reservoir East Haddam	40	240	88 L. M.				
Morgan Pond Newtown				500			
New City Pond Stafford				2,000			
North Farms Res. Wallingford	27	730			2,540	4,000	
Old Killingly Pond Killingly				2,000			
Old Marsh Pond Plymouth & Bristol	1	690		450	9,200	6,500	45
Oneco Pond Sterling				1,000			
Orcuttville Pond Stafford				1,500			
Oxoboxo Lake Montville					6,000		500
Paper Goods Pond Berlin				300			230
Pataganset Lake East Lyme		(White) 536			20,000		
Peat Works Pond Berlin	56				1,309		
Lake Pocotopaug East Hampton		2,824		153	2,500		
Porter Pond Sterling				1,000			
Railroad Pond Berlin				300			230
Rogers Lake Lyme	33	318	1 L. M.	38	89		
Roseland Lake Woodstock		1,000			1,700		
Salmon River East Haddam					529		
Schoolhouse Pond Pomfret				500			

## DISTRIBUTION OF FISHES TO LAKES AND PONDS

(Cont'd)

SEASON OF 1938

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Shaker Pond Enfield						3,000	
Shaw Lake East Haddam	22	925	16 L.M.	81	2,731		
Somersville Pond Somers	22	1,725		768	82	3,000	
So. Spectacle Lake Kent				1,000	500		
Stafford Reservoir Stafford				2,000	10,000		250
State Line Pond Stafford				1,500	10,000		250
Sterling Mill Pond Sterling				1,000			
Strong's Pond Woodbridge				500	500		
Sturtevant's Pond Stafford				1,500			
Terramuggus Lake Marlborough	4	1,040		187	3,494	13,326	
Walkers Res., Lower Vernon						4,000	
Wattles Pond Watertown	176	840	33 L.M.	191	521		
Waungumbaug Lake Coventry		2,883		128		2,000	
Willimantic Res. Bolton		945		89			
Wilson's Pond Southington					2,000	2,000	
Windsorville Pond East Windsor		1,318				2,000	
Wood Creek Pond Norfolk	15	177	7 L.M.		2,200		
TOTALS	864 (White)	31,714 2,228	180 L.M. 23 S.M.	39,117	157,204	115,776	5,891
Grand Total—352,997							

## SUMMARY STATEMENT OF PONDFISH PLANTED

Species	Fingerlings	Adults
Pickrel.....	325	539
Yellow Perch.....	8,300	23,414
White Perch.....		2,228
Largemouth Black Bass.....		180
Smallmouth Black Bass.....		23
Calico Bass.....	36,100	3,017
Bullheads.....	88,544	68,660
Shiners.....	61,500	54,276
Roach.....	3,230	2,661
Totals.....	197,999	154,998

Grand Total—352,997

## DISTRIBUTION OF FISHES TO LAKES AND PONDS

SEASON OF 1939

Name of Water Stocked	Pickrel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Ball Pond New Fairfield		1,700					
Beardsley Park Pond, Bridgeport	48	1,482			382		
Black Pond Meriden				1,500	1,500		
Burr Reservoir Torrington	4	1,515		2	5		
Candlewood Lake New Milford					15,000		
Cedar Lake Chester	2	350					
Cedar Swamp Pd. Bristol & Wolcott	25	4,824		20	6,322	3,000	
Columbia Reser. Columbia	65	200			10,000	10,000	300
Crane Pond Morris		500					
Freshwater Pond Enfield		560			5,022	2,000	405
Fulton Park Pond, Lower, Waterbury		551			300		
Gardner Lake Salem			34 S.M.				
Griswold Pond Chester		150					
Highland Lake Winchester	40	1,137		79	4,073	2,030	235
Hitchcock Lake Wolcott					5,000	2,000	

Name of Water Stocked	Pickerel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Lakewood Pond Waterbury	28	509			3,500		
Long Meadow Pond Bethlehem					3,000		
Long Meadow Pond Middlebury					5,500	1,500	
Manitook Lake Granby					5,000	2,000	
Mashapaug Lake Union	40	1,256			5,243	5,000	
Moodus Reservoir East Haddam			13 L.M.				
Mount Tom Pond Morris					900		
Mungers Ponds Guilford		300			200		
North Spectacle Lake, Kent	36	1,918		5	8,043	1,000	30
Old Marsh Pond Plymouth	4	1,375	8 L.M.	3	5,006	3,000	
Oxoboxo Lake Montville		1,000					
Pataganset Lake East Lyme	6	3,150 (White) 144		3	263		
Peat Works Pond Berlin & Meriden	13	373		45	2,800		
Pickerel Lake Colchester			32 L.M.				
Lake Pocotopaug East Hampton					2,500		
Powers Lake East Lyme		1,010			50		
Quonnipaug Lake Guilford	1	2,791			2,692		
Roseland Lake Woodstock	4	246			9,500	3,500	
Roses Pond Milford		500					
Russell Jennings Pond, Chester		350	50 L.M.				
Shaker Pond Enfield		1,000	2 S.M.				
Shaw Lake East Haddam	22	458			1,490		
Shenipsit Lake Vernon & Tolland	85	178	50 S.M.	8	5,135	5,235	
Somersville Pond Somers				201			
Stanley Park Pond New Britain		827			853		

Name of Water Stocked	Pickerel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Tankerhoosen Lake, Vernon	85	2,676		7	6,064	5,000	
Terramuggus Lake, Marlborough	10	114	4 S.M.		2,279		
Upper Basin Pond, Windsor Locks					5,000		
Wattles Pond Watertown				72	3,000		
West Pond Guilford	5	416	4 S.M.		3,086		
Windsorville Pond East Windsor					5,000	3,000	
Wood Creek Pond, Norfolk	11	2,365					
<b>TOTALS</b>	<b>534</b>	<b>35,781</b>	<b>94 S.M.</b>	<b>1,945</b>	<b>133,708</b>	<b>48,265</b>	<b>970</b>
		(White) 144	103 L.M.				
		Grand Total—221,544					

### SUMMARY STATEMENT OF PONDFISH PLANTED

Species	Fingerlings	Adults
Pickerel.....	140	394
Yellow Perch.....	3,074	32,707
White Perch.....		144
Largemouth Black Bass.....		103
Smallmouth Black Bass.....	46	48
Calico Bass.....	1,687	258
Bullheads.....	96,900	36,808
Shiners.....	35,000	13,265
Roach.....		970
<b>Totals.....</b>	<b>136,847</b>	<b>84,697</b>
	Grand Total—221,544	

### DISTRIBUTION OF 4TH STAGE LOBSTERS

1940

#### New London County

Point Released	Number
Groton Long Point.....	20,000
Masons Island.....	10,000
Mystic Island, South Side.....	10,000
Mystic Island, North Side.....	5,000
Pine Island.....	15,000
Pine Island.....	10,000
Stonington Breakwater.....	16,000
Swimming Rock, off Noank.....	10,000
<b>Total.....</b>	<b>96,000</b>

**SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1938**

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minor's)	Special Combination*	Nonresident Angling	Nonresident Property Owners' Angling	Nonresident Hunting	Nonresident Property Owners' Hunting	Nonresident Combination	Nonresident Property Owners' Combination	Alien Angling	Alien Property Owners' Angling	Special**	Total Revenue
Hartford.....	7,998	3,695	1,938	112	130	54	28	65	12	40	—	3	2	89	56	1,204	47,397.40
New Haven.....	6,187	4,260	1,480	85	67	30	28	56	3	8	1	5	4	64	73	1,051	40,599.55
New London.....	1,551	1,046	492	58	60	16	16	77	11	16	9	4	2	17	22	465	11,679.70
Fairfield.....	4,091	4,091	1,336	71	76	43	29	241	—	51	3	6	4	19	13	796	34,051.95
Windham.....	1,349	582	442	27	51	15	32	118	10	26	4	6	8	12	7	385	9,629.40
Litchfield.....	4,119	1,933	1,069	90	66	20	62	386	5	48	3	5	4	28	27	717	27,404.80
Middlesex.....	786	1,003	296	65	63	45	12	48	—	16	—	—	—	1	1	246	7,904.00
Tolland.....	1,143	411	319	17	33	16	21	58	8	13	1	3	2	17	16	225	7,239.15
Office.....	—	—	—	—	—	—	—	20	—	—	—	—	—	—	—	—	109.55
Totals.....	27,224	17,021	7,372	525	546	239	228	1,069	49	218	21	32	26	247	215	5,089	
Revenue.....	\$81,672	\$51,063	\$36,860	\$2625	\$1638	\$239	\$1596	\$5474.30	\$147	\$2180	\$63	\$448	\$130	\$1235	\$645	No Revenue	\$186,015.30

\*Resident Hunting, Trapping and Angling

\*\*For residents over sixty-five years of age. Issued on payment of recording fee only. This license is issued for hunting, angling, or combination hunting and angling privileges.

SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1939

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minor's)	Special Combination*	Nonresident Angling	Nonresident Property Owners' Angling	Nonresident Hunting	Nonresident Property Owners' Hunting	Nonresident Combination	Nonresident Property Owners' Combination	Alien Angling	Alien Property Owners' Angling	Resident Temporary Angling†	Nonresident Temporary Angling†	Special**	Total Revenue
Hartford.....	7,755	4,432	2,007	120	134	57	26	44	8	34	3	—	1	101	53	36	14	1,212	49,167.50
New Haven..	5,778	4,749	1,570	59	93	38	23	46	—	14	1	1	2	61	67	23	16	1,071	41,159.25
New London.	1,641	1,572	495	67	68	21	15	65	5	32	7	3	2	16	20	13	21	411	13,702.50
Fairfield....	3,664	4,557	1,300	68	85	54	36	191	2	61	—	3	—	25	13	33	41	846	33,963.25
Windham....	1,380	984	417	45	55	22	32	151	11	27	3	2	6	16	6	3	8	352	11,063.10
Litchfield....	3,681	2,080	1,075	84	77	13	54	304	2	58	3	8	1	24	21	17	93	677	26,313.05
Middlesex ...	797	1,264	334	61	73	42	20	27	—	28	—	1	—	2	1	6	19	276	9,039.10
Tolland.....	1,055	672	313	35	35	31	22	41	9	12	2	2	2	12	11	3	21	214	7,736.45
Office.....	—	—	—	—	—	—	—	3	—	2	—	—	—	—	—	—	—	—	37.20
Totals... 25,751	20,310	7,511	539	620	278	228	872	37	268	19	20	14	257	192	134	233	5,059		
Revenue.	\$77,253	\$60,930	\$37,555	\$2695	\$1860	\$278	\$1596	\$4451.20	\$111	\$2680.70	\$57	\$280	\$70	\$1285	\$576	\$134	\$349.50	No revenue	\$192,161.40

\*Resident Hunting, Trapping and Angling

\*\*For residents over sixty-five years of age. Issued on payment of recording fee only. This license is issued for hunting, angling, or combination hunting and angling privileges.

†Issued only during last six months of year.





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State of Connecticut  
PUBLIC DOCUMENT No. 19

**TWENTY-FOURTH BIENNIAL REPORT**  
*OF THE*  
**CONNECTICUT STATE BOARD  
OF FISHERIES AND GAME**

*FOR THE YEARS*

**1940-1942**

~~1942~~



**TWENTY-FOURTH BIENNIAL REPORT**

*OF THE*

**CONNECTICUT STATE BOARD  
OF FISHERIES AND GAME**

*FOR THE YEARS*

**1940-1942**

**HARTFORD**

**PUBLISHED BY THE STATE**

Printed under authority of Section 142,  
General Statutes of Connecticut,  
Revision of 1930.

JOHN M. DOWE,  
*State Comptroller.*

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November 27, 1942

TO HIS EXCELLENCY, ROBERT A. HURLEY

Governor of Connecticut

Executive Chambers

Hartford, Connecticut

SIR:

The Commissioners of the State Board of Fisheries and Game respectfully submit herewith the Twenty-fourth Biennial Report of the activities of this department as presented by heads of the various divisions and covering the two-year period from July 1, 1940 to June 30, 1942.

Public interest in fish and game as well as in conservation and restoration of natural resources has unquestionably reached a new peak in Connecticut. In addition to the normal viewpoints of both sporting and commercial interests, the War has brought a new and sharpened consciousness of the necessity for rugged physical endurance in our fighting men and in our men and women soldiers of the production line in city or country, farm or factory.

Facilities for hunting and fishing, being distributed as evenly as possible throughout the State, provide the incentive and opportunity for healthful recreation within reasonably easy access of both large centers of population and rural communities. Thus the sportsmen may explore the mysteries of placid lake, rushing stream or tidal water, and, in proper season, with bird dog or hound may roam the rocky hills, deep swamps or thickets of our own Connecticut. These are freedoms familiar to us but denied to the ordinary citizens of many foreign nations.

During the period of activities described in this report, distribution and stocking of fish and game reached the highest totals ever attained in the history of the State. Public response to this accomplishment has been extremely favorable, as indicated by the many expressions of satisfaction which have been received, and, incidentally, by a substantial increase in the number of hunting and fishing licenses issued. If financial and other conditions permit, this department intends to expand further its facilities for intensive stocking of fish and game.

Stocking of fish and game would be useless if there were no land or water open to public hunting and fishing. An important function of the State Board of Fisheries and Game is to provide places where legal hunting and fishing is permitted and to develop friendship and under-

standing between landowners and sportsmen. In addition to the 90,043 acres of State Forests available for public use, this Department has increased, during the biennium, the acquisition of hunting and fishing rights by cooperative agreement, by lease methods, and where necessary, by outright purchase. Our sincere appreciation is tendered to the State Forest and Park Commission for its most valuable advice and experience in the matter of purchase acquisitions.

Marine Fisheries continues to be an activity of major interest to the Board. The Lobster Conservation Program which has been in operation during the biennium includes propagation and stocking of lobsters, the purchase and return of green egg lobsters to the water, and the enforcement of the lobster laws.

The State Board of Fisheries and Game gratefully acknowledges the assistance and cooperation of all State officials and the members of the Legislature, all federal agencies having to do with the restoration of wildlife resources, the Press, the Connecticut State League of Sportsmen's Clubs, the Advisory Council, and many other organizations and individuals interested in the maintenance and perpetuation of wildlife, an important economic asset in the welfare of the State of Connecticut.

If the efforts of this department have materially contributed to the perpetuation of wildlife, to the restoration of natural habitat and to the encouragement of our people to seek health and enjoyment in natural surroundings, those of us who engage in this work will feel a deep sense of gratification.

Respectfully submitted,

FRANCIS L. SHEANE, Chairman

PHILIP C. BARNEY

JOHN E. FLAHERTY, M.D.

TO THE COMMISSIONERS,  
STATE BOARD OF FISHERIES AND GAME:

I have the honor to submit herewith a report on the activities of this department for the biennial period ending June 30, 1942.

Respectfully,

R. P. HUNTER, Superintendent

Hartford, Conn., November 27, 1942

**The following members of the staff of the State Board of Fisheries  
and Game have entered Military or Naval Service**

George W. Hunter, III, Aquatic Biologist

Ralph L. Huey, Research Assistant

Alfred J. Hunyadi, Deputy Warden

Donald Deane, Deputy Warden

Steve J. Muska, Deputy Warden

Philip C. Barney, Chairman of Board

Thomas J. McCarroll, Mail and Supply Clerk

Norman G. Wilder, Game Management Technician

Harding F. Joray, State Warden

Charles L. Rogers, Fish Hatchery Foreman

Leslie A. Williamson, Game Management Technician

## BIENNIAL REPORT

1940-1942

### Administration

**Budgets.** The Department presented a budget for 1941-1943 calling for an appropriation of \$123,624 from the General Fund and the expenditure of \$10,000 in excess of anticipated revenue in the Fish and Game Funds respectively, with a view to reducing the cash reserves which had accumulated as a result of increased license revenues.

This budget was revised by the Appropriations Committee and on its recommendation the Legislature appropriated the sum of \$102,000 for the biennium. This was \$21,624 less than the amount originally requested. Items which were not provided for were: (1) construction of fishway at Leesville; (2) maintenance of dams; (3) purchase of land; and (4) construction of a shad hatchery. These items were not considered as immediately important.

The Appropriations Committee at the same time increased the amount to be expended from the Game Fund for the biennium by \$10,241 over the original estimates of the Department and definitely ear-marked \$51,880 in the first year and \$54,062 in the second year for the purchase of game. In the Fish Fund \$24,216 in the first year and \$24,706 in the second year was definitely ear-marked for the purchase of fish and the total amount to be expended was increased by \$28,718 over the Department's estimate for the biennium.

For the biennium 1943-1945, the Department has presented a budget requesting an appropriation of \$63,305.95 for the year 1943-1944 and \$70,007.20 for the year 1944-1945 from the General Fund. The increase in the amount requested for the year 1944-1945 over that requested for 1943-1944 is chiefly to cover the cost of renewing leases on hunting and fishing areas which expire during that year.

In requesting this appropriation the Department has followed the same general policy laid down by the Legislature of 1941 which provided money from the General Fund to finance programs formerly financed from that source and an additional amount of approximately \$10,000 per annum to finance some expenditures formerly financed from the Fish and Game Funds. This was done in order to release additional money for the purchase of fish and game and in recognition of the fact that the Department renders certain services of benefit to the general public.

The results of this policy have been reflected in the general satisfaction expressed by hunters and fishermen with the hunting and fishing success experienced during the last year.

In this period of war emergency the Department has a greater obligation than ever to provide through its program of wildlife restoration the incentive and opportunity for healthful outdoor recreation so essential to the development of physical stamina. The increase in the sales of fishing and hunting licenses during the last year, and reports from town clerks, wardens, and others, bear evidence that workers in war industries and civilians engaged in defense activities are making use of the recreation offered in hunting and fishing activities to find momentary relaxation which contributes to their physical well-being and morale.

The requested appropriation from the General Fund for the biennium 1943-1945 would cover the financing of administrative costs, the renewals of leases on leased hunting and fishing areas and a portion of the expense of administering these areas (posters, permits, etc.), the program for the restoration of lobsters and flatfish, and a portion of the cost of law enforcement activities (less than 20% of the total cost). (See page 19). The estimates do not provide for the expansions of any programs now in effect, nor the addition of any new personnel.

They do provide for replacements of equipment, automotive supplies, and uniforms, which are required but which may not be available. These items were included in the budget at the suggestion of the Budget Division.

In the budget for the biennium 1943-1945, the Board has also followed the policy, suggested by the General Assembly of 1941, of allocating from the funds specific amounts for the purchase of fish and game comparable to the amounts allocated for such purposes for the current biennium. These amounts may have to be reduced if there should be a sharp falling off of revenue.

**Finances.** Financial statements covering the fiscal year 1940-1941 and 1941-1942 will be found on pages 17 and 18 of this report.

The total of the working balances in the funds carried over at the end of the fiscal year 1940-1941 was approximately \$10,700 in excess of the total balances on hand June 30, 1940. This increase was due to an increase of license revenue for that year of approximately the same amount.

During the fiscal year 1941-1942 the income from the sales of angling and hunting licenses exceeded the income from the same source for any previous year by approximately \$42,500. This increase in sales might be attributed to a number of factors such as: (1) the influx of defense workers into the State; (2) the need felt by war workers for some form of healthful outdoor recreation; (3) travel restrictions which kept local sportsmen from going north for their hunting and fishing; (4) liberations of more fish and game and attendant publicity regarding them; and (5) increase in earning capacity of a larger proportion of the population.

The income from the sale of hunting and angling licenses and from miscellaneous receipts credited to the Fish and Game Funds for the four-year period 1937-1941 was as follows:

	<i>Inland Fish Fund</i>	<i>Game Fund</i>
1937-1938	\$115,909.28	\$88,012.03
1938-1939	105,182.25	81,759.80
1939-1940	106,393.81	95,657.16
1940-1941	116,645.43	97,228.51
Average annual income for the four-year period	\$111,032.69	\$90,664.37

On the basis of these figures the Department estimated an income of \$115,000 for the Inland Fish Fund and \$95,000 for the Game Fund for the biennium 1941-1943.

The actual income received, however, during the first year of the biennium was as follows: Inland Fish Fund—\$135,708.33; Game Fund—\$119,914.87; a total increase over our estimates of approximately \$45,600, and an increase over any previous year in the history of the Department of approximately \$42,500.

This increase in revenue resulted in a substantial increase in our estimated working balance at the close of the fiscal year 1941-1942 even though the Board had increased its expenditure program for the year by about \$22,000. This addition to the budget was used for land purchases, acquisition of permanent fishing rights on the Farm River, and acquisition of hunting and fishing rights on new areas. Had the license revenue for the year 1941-1942 not been larger than the estimates, the total cash balance in the Fish and Game Funds as of June 30, 1942 would have been approximately \$66,300 instead of approximately \$111,900.

For the fiscal year 1942-1943 the Board has budgeted \$27,550 from the funds in addition to the amount appropriated by the General Assembly. This additional money will be used to finance the increased cost of birds for liberation this year, the purchase of lands for public hunting and fishing and the protection of hatchery properties, and the acquisition of term leases on new hunting areas.

Authority for increasing the Department's expenditure budget was given by the Governor in accordance with power vested in him by Section 85e of the 1939 Cumulative Supplement.

**Cash Balances.** The cash balances are, in effect, working balances to enable the Department to carry on its programs during periods of low income. For example, the bulk of the hunting license money is not made available to us until November of each year though our heaviest expenditures in the purchase of pheasants are made during the months of September and October. Likewise, the bulk of the angling revenue is

not received until May of each year so that in the case of the Fish Fund we virtually have to operate for almost an entire fiscal year on the balances on hand at the beginning of the fiscal year.

On the basis of anticipated revenue and expenditures for the year 1942-1943 the estimated cash balance at the end of this fiscal year in the Fish and Game Funds will be approximately \$85,000.

It is desirable to have a total cash balance at the end of each fiscal year in the two funds sufficient to make sure of having enough cash on hand at all times to meet the obligations of the Department.

**Office Activities.** In addition to the handling of correspondence and mail and supplies, the office is responsible for a great deal of clerical work such as: auditing and accounting; issuance of approximately five thousand licenses and permits of various kinds; checking of reports of town clerks of licenses issued by towns each month, and verifying the sales with the receipts turned in to the Treasurer's Office; keeping records of arrests, deer killing reports, sportsmen checked, fish and game taken by sportsmen as reported by wardens and patrolmen, of fish planted by streams and ponds; reports of private shooting preserves; reports of predators and fur-bearers taken by trappers on State-owned properties; of personnel of all permanent and temporary employees; of leases on hunting and fishing areas, and dates and expirations of such leases.

**Personnel.** On June 30, 1941 the term of Charles F. Griffin, who had served on the Board since 1930, expired. Governor Hurley appointed Dr. John E. Flaherty to fill the vacancy created by Mr. Griffin's retirement.

The office staff now comprises one accountant-auditor, one stenographer, a license clerk, a mail and supply clerk, three typists, and an executive assistant who is in charge of all office activities.

During the year 1941 it became necessary to add one additional person to the office staff to absorb extra work in connection with the tagging of approximately 29,000 pheasants, with the preparation, proofreading and editing of the pond survey manuscript, with the typing of scale specimen cards and survey reports for the Pond Survey Program and with the typing and editing of Pittman-Robertson Project Reports. Approximately one-third of the cost of financing this additional help was contributed by the Federal Government in connection with Pittman-Robertson projects. The addition of this clerk represents an increase of only one person to the office staff since 1930. The amount of work, however, has increased considerably in the past ten years.

In the spring of 1941 Mrs. V. L. Bencks, who had been with the Department nearly eleven years and whose services were invaluable, resigned. Because of her experience and knowledge of Department affairs and her unusual ability, the loss of her services is keenly felt.

**Publications.** During the biennium the Department has provided for distribution to sportsmen through town clerks, sporting goods dealers and other agencies 100,000 pamphlets (25,000 each season—each year) which give a summary of the more important laws relating to hunting and fishing, lists and maps of areas under regulation by the Board and regulations for hunting and fishing on those areas. The maps are reproduced in this report. It has also published a limited edition of an annual report of its activities for the year 1941 in mimeographed form in order to keep the public abreast of Department activities.

An edition of the State Highway Department map was also issued by this Department, with the maps mentioned above presented on the reverse side.

"A Fishery Survey of Important Lakes and Ponds in Connecticut" was issued as a publication of the Connecticut Geological and Natural History Survey Series (Bulletin No. 63). This bulletin is described in the section on "Fish Restoration."

A bulletin on the "Life History of the Cottontail Rabbit" is now in the process of publication, as a member of the above series. This bulletin will be published in cooperation with the University of Connecticut and the American Wildlife Institute.

**Advisory Council.** An organization of sixteen sportsmen, two from each county, known as the Advisory Council, was formed in 1932 at the suggestion of Thomas H. Beck, Chairman of the Board at that time, for the purpose of improving and increasing contacts and cooperation between the Board and the sportsmen of the state.

This organization meets with the Board and staff members once a month in an advisory capacity. It has proved very helpful as a coordinating agency and the Board is deeply appreciative of the time, effort and helpful advice which it has received from its members who serve without compensation.

A list of the present members follows:

*President*—MERRITT W. TREAT, Hartford

*Vice-President*—GEORGE S. HOPKINS, South Norwalk

**Hartford County**

<sup>1</sup> Merritt W. Treat, Hartford

<sup>2</sup> Ernest Clark, Windsor

**New Haven County**

J. P. Montgomery, Hamden

<sup>3</sup> Karl W. Reynolds, Wallingford

**New London County**

Edward L. Hall, Norwich  
 4 George P. Wargo, Waterford

**Fairfield County**

George S. Hopkins, So. Norwalk  
 5 Arthur Hurley, Danbury

**Windham County**

Leslie F. Hartson, Windham  
 6 William Russell Ware, Putnam

1 Replaced C. H. Vaill  
 2 " W. H. Dresser  
 3 " Ray Benson  
 4 " Samuel Ferguson  
 5 " Henry Rocano

**Litchfield County**

James W. Concannon, Torrington  
 7 Robert L. Sullivan, New Milford

**Middlesex County**

8 Stanley Atwell, Middletown  
 9 Stanley Warner, Chester

**Tolland County**

Neil W. Hosley, Storrs  
 10 Thomas F. Rady, Rockville

6 Replaced George Whitney  
 7 " Douglas Adam  
 8 " Northam Wright  
 9 " James H. L. Ott  
 10 " Lawrence Dillon

**Extension of Seasons.** Under the discretionary power law the Board extended the trout season in 1940 from July 16 to July 31, inclusive, and provided a further extension of the season on the larger trout streams to and including October 15, advanced the trout season in 1941 to April 12 and extended it again on all trout streams to and including July 31 with a further extension on the larger streams to and including October 31. The Board also extended the season for commercial shad fishing from June 16 to June 25, inclusive.

In the fall of 1940 the season on pheasants, grouse, quail and gray squirrel was advanced to October 19, and again in 1941 the season on these species was advanced from October 20 to October 18. An extension of one week in the open season on pheasants was also provided for to and including December 6.

On April 29 the Governor's Office proclaimed a closed season on angling in inland waters, except from boats, because of drought conditions. The season was reopened on May 7 at noontime. The Board extended the trout fishing on all streams in the state to and including July 31, and on the larger trout streams of the state to and including September 30. The Housatonic River was left open to trout fishing until October 31.

**Land and Water Acquisition.** During the past biennium the State Board of Fisheries and Game has acquired over eleven hundred acres of land. Forty-two acres were purchased in Burlington to protect the watershed of Punch Brook which feeds the trout hatchery.

Four hundred sixty-eight acres were purchased along the Dickenson Stream in the towns of Marlborough, East Hampton and Colchester; two hundred sixty acres were purchased along the watershed of the Blackledge River in Marlborough and ninety-six acres were purchased in the town

of Eastford on the Watershed of the Bigelow Brook. These acquisitions have provided additional permanent hunting and fishing areas which were formerly closed to the public.

All the above-mentioned parcels of land lie within the State Forest purchase areas and therefore the administration of these parcels of land has been transferred to the State Forestry Department. Control over all wildlife on State-owned property is the responsibility of this Board and there is close cooperation between the State Forestry Department and the State Board of Fisheries and Game in the development of State forests for fishing and hunting.

The purchase of land by the Department in the Salmon River Forest Area has added to the land under Department control one and a quarter miles of the Dickenson Stream and one and a half miles of the Blackledge River. The purchase of these stretches of water on the tributaries of the Salmon River will, in the future, permit stream improvement and also the construction of truck trails in the vicinity of these streams to provide greater accessibility.

The Board has also added 258 acres of salt meadow land on and in the vicinity of Great Island in Old Lyme for waterfowl shooting. The State now owns about five hundred acres of the six hundred acres on Great Island proper, 220 acres of the 250 acres on the Upper Island in the town of Old Lyme, and eighty acres of salt marsh south of the railroad between Ragged Rock Creek and the Connecticut River in the town of Old Saybrook.

The Board has also purchased a parcel of land for use as a right-of-way to Great Island at the southerly end of the Smith Neck Road in Old Lyme, and a dock has been erected on the bank of the Back River across from the Island.

A parcel of land has been purchased for a right-of-way to the Willimantic Reservoir from Route 44 to the reservoir in the town of Bolton.

In addition to purchases made, the Department has renewed approximately 280 leases on public shooting grounds and State-leased streams.

It is felt that one of the most important activities of the Department is to provide as much land and water for public hunting and fishing as possible within the limits of its financial resources.

The Department has therefore acquired, by lease, fishing rights on Latimer's Brook in the towns of East Lyme and Montville for a period of five years and hunting rights on 3,815 acres of land in the towns of Brooklyn and Pomfret, 7,830 acres of land in the towns of Lebanon and Franklin and 3,706 acres in the town of Waterford, each for periods of four years. These new areas will now be open to public fishing and hunting for the duration of the leases.

The fishing rights on the Farm River, held under easement by the Waltonian Club, were purchased by the State Board of Fisheries and Game during the period of this biennium. These rights were purchased from the landowners along the Farm River in the towns of East Haven and North Branford about 1870 and have been held continuously by the Club since that time. In 1935 the Waltonian Club placed the stream under the management of the State Board of Fisheries and Game, and it has been operated as a State-regulated stream since that time. In May, 1942 the Waltonian Club agreed to sell the rights to the State Board of Fisheries and Game. The purchase was recommended by our Board and approved by the Attorney General, the State Finance Commissioner, the Comptroller, and the Governor.

At the suggestion of the Budget Division, a request is being made in the budget of the Commission on Forests and Wild Life for an appropriation of \$20,000 per annum for the purchase of lands and waters for strictly wildlife purposes.

**Land Survey.** This Department owns about thirty parcels of real estate distributed throughout Connecticut. These parcels are usually small in acreage and have not been properly surveyed and provided with boundary markers. During the past year the assistance of the Highway Engineering Division has been secured to survey and install boundary markers on the properties. Maps of these properties are being prepared at the same time.

This project was about one-third completed at the end of the biennium. The work is being billed to this Department on a cost basis as completed.

#### **Members of Administrative Division**

Mildred K. Bartle, Executive Assistant  
Gilbert H. Ahlgren, Accountant-Auditor  
Rose Sharfman, Clerk  
Faith F. Crocker, Stenographer  
Rosemary M. McCurdy, Typist  
Roy Eno, Mail and Supply Clerk  
Nancy Corbett, Typist  
Mary Flynn, Typist

# Financial Statement

July 1, 1940 — June 30, 1942

## MEANS OF FINANCING

### Working Balances

	1940-1941	1941-1942
Game Fund .....	\$39,322.22	\$49,788.21
Inland Fish Fund .....	72,925.59	72,840.18
Marine Fish Fund .....	4,768.30	5,085.39

### Receipts from sale of hunting and angling licenses and other sources

Game Fund .....	97,228.51	119,914.87
Inland Fish Fund .....	116,645.43	135,708.33
Marine Fish Fund .....	2,845.62	3,526.10
Appropriations .....	* 47,010.75	55,050.00

<b>TOTAL CASH RESOURCES</b> .....	<b>\$380,746.42</b>	<b>\$441,913.08</b>
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## EXPENDITURES

### Division of Administration

Personal Services .....	\$17,243.99	\$18,462.08
Expenses of Advisory Council .....	238.61	403.00
Expenses of Superintendent .....	450.26	† 834.57
Expenses of Office .....	2,094.28	2,520.26

	<sup>1</sup> \$20,027.14	<sup>1</sup> \$22,219.91
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### Division of Fish Restoration

#### Inland Fisheries

Supervision .....	\$10,648.11	\$ 8,857.89
Trout Restoration .....	53,614.13	87,648.06
Pond Fish Restoration .....	6,307.11	8,415.11
Permanent Improvements .....	3,524.71	.....
Stream Study .....	.....	964.60
Maintenance of Boats .....	238.56	87.80
Purchase of licenses and holders .....	2,028.28	1,652.52
Insurance .....	2,678.93	1,131.35
Miscellaneous .....	362.87	348.80
Survey of Land .....	.....	823.64
Demolition of Building at Leesville .....	.....	75.00

	<sup>2</sup> \$79,402.70	<sup>2</sup> \$110,004.77
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### Marine Fisheries

Supervision .....	.....	\$ 1,830.00
Salary and Expenses of Marine Warden .....	\$ 2,349.82	2,950.20
Lobster Restoration .....	7,619.53	9,202.14
Purchase of Green egg lobsters .....	2,192.00	4,657.80
Miscellaneous .....	178.71	143.65
Investigation .....	.....	94.52
Smelt Restoration .....	.....	25.00
Completion of Dock .....	.....	950.00

	<sup>3</sup> \$12,340.06	<sup>3</sup> \$19,853.31
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\* Represents amount appropriated by Legislature less 5% set aside in reserve at request of Governor.

† Includes new car.

<b>Division of Game Restoration</b>	<i>1940-1941</i>	<i>1941-1942</i>
Supervision .....	\$ 5,548.57	\$ 6,034.19
Game Restoration and Restocking Program ..	38,470.79	56,495.94
Game Refuges .....	1,138.23	667.81
Purchase of licenses and holders .....	1,955.25	1,810.57
Game Management (Pitman-Robertson projects) .....	5,607.94	8,557.57
Insurance .....	630.51	25.18
Miscellaneous .....	284.82	428.39
Survey of Land .....	.....	1,700.00
	<hr/>	<hr/>
	\$53,636.11	<sup>4</sup> \$75,719.65
 <b>Division of Law Enforcement</b>		
Personal Service .....	\$44,068.00	\$45,064.98
Travel and other expenses .....	12,834.37	10,928.13
Equipment .....	3,318.20	2,436.40
	<hr/>	<hr/>
	<sup>4</sup> \$60,220.57	<sup>5</sup> \$58,429.51
 <b>Land and Water Acquisition</b>		
Leases, recording fees, etc. ....	\$14,106.56	\$12,635.28
Permits, posters, etc. ....	2,342.07	2,271.09
Patrol service .....	10,718.00	11,874.17
Purchase of Land .....	.....	9,295.00
	<hr/>	<hr/>
	<sup>5</sup> \$27,166.63	<sup>6</sup> \$36,075.54
 <b>TOTAL EXPENDITURES</b> .....	\$252,793.21	\$322,302.69
<b>Balance</b> .....	127,953.21	119,610.39
	<hr/>	<hr/>
	\$380,746.42	\$441,913.08
 <b>Working Balances Carried Over</b>		
Game Fund .....	* \$49,788.21	* \$51,822.21
Inland Fish Fund .....	* 72,840.18	* 60,120.98
Marine Fish Fund .....	* 5,085.39	* 4,610.61
Reverted to Treasury .....	239.43	3,076.59
	<hr/>	<hr/>
	\$127,953.21	\$119,630.39

## Expended from Appropriations

<i>1940-41</i>		<i>1941-42</i>	
1 \$19,961.97		1 \$22,219.91	
2 414.38		2 1,897.94	
3 9,811.53		3 15,852.43	
4 134.81		4 91.93	
5 16,448.63		5 6,599.84	
		6 5,311.36	
		<hr/>	
\$46,771.32		\$51,973.41	
239.43	Reverted to Treasury	3,076.59	Reverted to Treasury
<hr/>		<hr/>	
\$47,010.75		\$55,050.00	

\* Reflects balances of funds after all commitments prior to June 30th have been paid.

## BUDGET ESTIMATES FOR THE BIENNIUM 1943-1945

## Appropriation from the General Fund

## DIVISION OF ADMINISTRATION

	<i>Requested 1943-1944</i>	<i>Requested 1944-1945</i>
<b>Personal Services</b>		
Permanent .....	\$20,240.00	\$21,020.00
Temporary .....	600.00	600.00
	<hr/> \$20,840.00	<hr/> \$21,620.00
<b>Expenses of Board and Council</b>		
Contractual Services .....	945.00	945.00
<b>Expenses of Superintendent</b>		
Contractual Services .....	400.00	450.00
Supplies and Materials .....	175.00	175.00
	<hr/> 575.00	<hr/> 625.00
<b>Expenses of Office</b>		
Contractual Services .....	677.00	627.00
Supplies and Materials .....	1,900.00	1,900.00
	<hr/> 2,577.00	<hr/> 2,527.00
<b>TOTALS — ADMINISTRATION .....</b>	<hr/> \$24,937.00	<hr/> * \$25,717.00

## DIVISION OF MARINE FISHERIES

<b>Field Supervision—Personal Services .....</b>	\$ 1,950.00	\$ 2,010.00
<b>Lobster and Flatfish Restoration</b>		
<b>Personal Services</b>		
Permanent .....	3,580.00	3,800.00
Temporary .....	2,290.00	2,290.00
Contractual Services .....	1,050.00	1,100.00
Supplies and Materials .....	3,485.00	3,485.00
Equipment .....	850.00	250.00
	<hr/> 11,255.00	<hr/> 10,925.00
<b>TOTALS — MARINE FISHERIES .....</b>	<hr/> \$13,205.00	<hr/> \$12,935.00
*Purchase of egg-bearing lobsters .....	\$ 5,000.00	\$ 5,000.00

## LAND AND WATER ACQUISITION PROGRAM

Contractual Services .....	\$ 5,268.95	\$ 9,790.20
Supplies and Materials .....	2,500.00	2,500.00
	<hr/> \$ 7,768.95	<hr/> \$12,290.20

## DIVISION OF LAW ENFORCEMENT

Contractual Services .....	\$ 3,650.00	\$ 3,850.00
Supplies and Materials .....	8,595.00	10,065.00
	<hr/> \$12,245.00	<hr/> \$13,915.00

Land and Non-Structural Improvement to Land...	\$ 50.00	\$ 50.00
New Structures .....	50.00	50.00
Structural Replacements .....	50.00	50.00
<b>TOTALS — GENERAL FUND .....</b>	<hr/> \$63,305.95	<hr/> \$70,007.20

\* See Section 1077e of 1939 Cumulative Supplement.

## GAME FUND

## DIVISION OF GAME RESTORATION

	<i>Requested 1943-1944</i>	<i>Requested 1944-1945</i>
<b>Field Supervision</b>		
Personal Services .....	\$ 5,520.00	\$ 5,640.00
Contractual Services .....	300.00	300.00
Supplies and Materials .....	450.00	450.00
Equipment .....	500.00	500.00
	<hr/>	<hr/>
	\$ 6,770.00	\$ 6,890.00

**Game Restoration Program**

Personal Services .....	200.00	200.00
Contractual Services .....	5,000.00	5,000.00
Supplies and Materials .....	2,600.00	2,600.00
Purchase of Game .....	53,450.00	53,450.00
	<hr/>	<hr/>
	\$61,250.00	\$61,250.00

**Game Sanctuaries**

Contractual Services .....	600.00	600.00
Supplies and Materials .....	200.00	200.00
	<hr/>	<hr/>
	\$ 800.00	\$ 800.00

**Pittman-Robertson Projects (Federal)**

<b>Personal Services</b>		
Permanent .....	\$ 2,390.00	\$ 2,460.00
Temporary .....	1,350.00	1,350.00
Supplies and Materials .....	330.00	330.00
	<hr/>	<hr/>
	\$ 4,070.00	\$ 4,140.00

**State Forest Game Study Project**

Personal Services .....	\$ 2,500.00	\$ 2,550.00
Contractual Services .....	200.00	200.00
Supplies and Materials .....	400.00	400.00
Equipment .....	525.00	.....
	<hr/>	<hr/>
	\$ 3,625.00	\$ 3,150.00

## DIVISION OF LAW ENFORCEMENT

Personal Services .....	\$26,310.00	\$26,610.00
Equipment .....	1,925.00	825.00
	<hr/>	<hr/>
	\$28,235.00	\$27,435.00

**PATROL SERVICE—Reg. Shooting Areas**

Personal Services (Temporary) .....	\$ 8,000.00	\$ 8,000.00
<b>Purchase of Licenses and Frames</b> .....	1,500.00	1,500.00
Miscellaneous .....	500.00	500.00
Land and Non-Structural Improvement to Land....	50.00	50.00
New Structures .....	50.00	50.00
Structural Replacements .....	50.00	50.00
	<hr/>	<hr/>

<b>TOTALS — GAME FUND</b> .....	\$114,900.00	\$113,815.00
---------------------------------	--------------	--------------

## INLAND FISH FUND

## DIVISION OF INLAND FISHERIES

	<i>Requested 1943-1944</i>	<i>Requested 1944-1945</i>
<b>Field Supervision</b>		
Personal Services .....	\$ 8,160.00	\$ 8,310.00
Contractual Services .....	625.00	675.00
Supplies and Materials .....	650.00	650.00
Equipment .....	1,300.00	.....
	<hr/> \$10,735.00	<hr/> \$ 9,635.00
<b>Trout Restoration Program</b>		
Personal Services .....	\$22,764.00	\$23,374.00
Contractual Services .....	1,675.00	1,675.00
Supplies and Materials .....	28,700.00	28,700.00
Purchase of fish and eggs .....	25,000.00	25,000.00
Equipment .....	.....	2,000.00
	<hr/> \$78,139.00	<hr/> \$80,749.00
<b>Pond Fish Restoration Program</b>		
Personal Services .....	\$ 3,062.50	\$ 3,132.50
Contractual Services .....	225.00	225.00
Supplies and Materials .....	375.00	375.00
Purchase of fish .....	1,200.00	1,200.00
Equipment .....	300.00	300.00
	<hr/> \$ 5,162.50	<hr/> \$ 5,232.50
<b>Maintenance of Boats</b>		
Contractual Service .....	\$ 40.00	\$ 40.00
Supplies and Materials .....	100.00	100.00
	<hr/> \$ 140.00	<hr/> \$ 140.00
<b>Patrol Service—Reg. Streams</b>		
Personal Services .....	\$ 6,601.00	\$ 6,601.00
<b>Miscellaneous</b> .....	500.00	500.00
<b>Inland Fisheries Study Program</b>		
Personal Services .....	\$ 6,040.00	\$ 6,040.00
Contractual Services .....	100.00	100.00
Supplies and Materials .....	160.00	160.00
	<hr/> \$ 6,300.00	<hr/> \$ 6,300.00
<b>DIVISION OF LAW ENFORCEMENT</b>		
Personal Services .....	\$26,310.00	\$26,610.00
Equipment .....	1,925.00	825.00
	<hr/> \$28,235.00	<hr/> \$27,435.00
<b>Purchase of Licenses and Frames</b> .....	\$ 1,500.00	\$ 1,500.00
<b>Land and Non-Structural Improvement to Land</b> ...	\$ 50.00	\$ 50.00
<b>Structural Replacements</b> .....	50.00	50.00
<b>New Structures</b> .....	50.00	50.00
	<hr/> \$137,462.50	<hr/> \$138,242.50
<b>TOTALS — INLAND FISH FUND</b> .....		

## MARINE FISH FUND

## DIVISION OF MARINE FISHERIES

	<i>Requested</i> 1943-1944	<i>Requested</i> 1944-1945
<b>Law Enforcement</b>		
Personal Services .....	\$ 2,460.00	\$ 2,520.00
Contractual Services .....	200.00	200.00
Supplies and Materials .....	250.00	250.00
Equipment (M.V.) .....	.....	500.00
	<hr/> \$ 2,910.00	<hr/> \$ 3,470.00
<b>Equipment (Boat) .....</b>	<b>\$ 1,500.00</b>	<b>\$ 1,500.00</b>
<b>License Flags and Tags .....</b>	<b>\$ 300.00</b>	<b>\$ 300.00</b>
Land and Non-Structural Improvement to Land	\$ 10.00	\$ 10.00
New Structures .....	10.00	10.00
Structural Replacements .....	10.00	10.00
<b>TOTALS — MARINE FISH FUND .....</b>	<b>\$ 4,740.00</b>	<b>\$ 5,300.00</b>

**SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1940**

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minors)	Special Combination*	Nonresident Angling	Nonresident Property Owners' Angling	Nonresident Hunting	Nonresident Property Owners' Hunting	Nonresident Combination	Nonresident Property Owners' Combination	Alien Angling	Alien Property Owners' Angling	Resident Temporary Angling	Nonresident Temporary Angling†	Special**	Total Revenue
Hartford ...	8,112	4,557	2,294	115	153	76	37	50	7	24	3	1	1	97	43	32	23	1,223	
New Haven ..	5,912	4,660	1,766	72	93	44	42	44	1	29	..	1	2	59	54	26	23	1,073	
New London..	1,564	1,468	497	61	63	30	26	63	9	36	9	3	1	15	16	7	42	439	
Fairfield ...	3,899	4,353	1,375	80	81	67	41	201	2	33	1	5	1	31	14	37	71	358	
Windham ..	1,416	856	457	41	56	30	41	145	14	30	4	4	7	12	4	4	12	376	
Litchfield ..	3,701	1,962	1,166	76	64	18	60	291	3	38	1	8	..	22	24	26	123	693	
Middlesex ..	752	1,181	363	61	75	59	27	34	4	32	1	1	..	4	..	7	18	282	
Tolland ....	1,083	641	350	40	33	26	27	40	11	11	3	2	1	7	11	11	22	225	
Office .....	..	..	..	..	..	..	..	11	..	1	..	1	..	..	..	..	2	..	..
Totals .....	26,439	19,678	8,288	546	618	350	301	879	51	284	22	26	13	247	166	150	346	5,169	
Revenue ...	\$79,317	\$59,034	\$41,340	\$2,730	\$1,854	\$350	\$2,107	\$4,486.90	\$153	\$2,840.35	\$66	\$364.35	\$65	\$1,235	\$498	\$150	\$519.70	no fee	\$197,110.30

\* Resident Hunting, Trapping and Angling.

\*\* For residents over sixty-five years of age. Issued on payment of recording fee only. This license is issued for hunting, angling, or combination hunting and angling privileges.

† Issued only during last six months of year.

**SUMMARY, 1940**

	Number Issued	Total Income	Average Yield per License to Department
Angling Licenses (all types) .....	42,055	\$107,946.61	2.57
Hunting Licenses (all types) .....	34,307	84,892.36	2.47
Trapping Licenses (all types) .... ..	1,815	4,271.33	2.35
<b>Total .....</b>	<b>78,177</b>	<b>\$197,110.30</b>	<b>2.52</b>

**SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1941**

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minors)	Special Combination*	Nonresident Angling	Nonresident Property Owners' Angling	Nonresident Hunting	Nonresident Property Owners' Hunting	Nonresident Combination	Nonresident Property Owners' Combination	Alien Angling	Alien Property Owners' Angling	Resident Temporary Angling	Nonresident Temporary Angling†	Special**	Total Revenue
Hartford ...	8,995	5,999	2,375	180	213	144	46	59	10	30	3	3	1	92	46	51	39		1,353
New Haven ..	6,451	5,752	1,865	110	139	72	56	52	3	21	3	1	2	51	50	32	22		1,057
New London .	1,749	1,873	530	89	91	38	32	70	3	30	17	5	2	18	11	7	43		468
Fairfield ...	3,880	4,954	1,460	104	135	101	45	219	10	57	11	3	3	41	9	54	90		394
Windham ...	1,520	1,060	452	68	84	38	49	164	2	32	3	3	7	22	6	3	22		371
Litchfield ..	3,945	2,267	1,230	99	101	39	35	267	5	39	3	4	2	19	22	26	190		697
Middlesex ...	805	1,402	365	75	104	73	27	34	3	36	1	..	..	4	2	7	31		270
Tolland ...	1,252	823	370	45	45	29	35	57	13	15	2	5	2	6	10	9	23		233
Office .....	..	..	..	..	..	..	..	10	..	5	..	1	..	1	..	..	2		..
Totals .....	28,597	24,130	8,647	770	912	534	345	932	56	265	53	25	19	254	166	189	467		5,343
Revenue ...	\$85,791	\$72,390	\$43,235	\$3,850	\$2,736	\$534	\$2,415	\$4,755.65	\$168	\$2,651.75	\$159	\$350.35	\$95	\$1,270.35	\$468	\$189	\$701.20	no fee	\$222,007.30

\* Resident Hunting, Trapping and Angling.

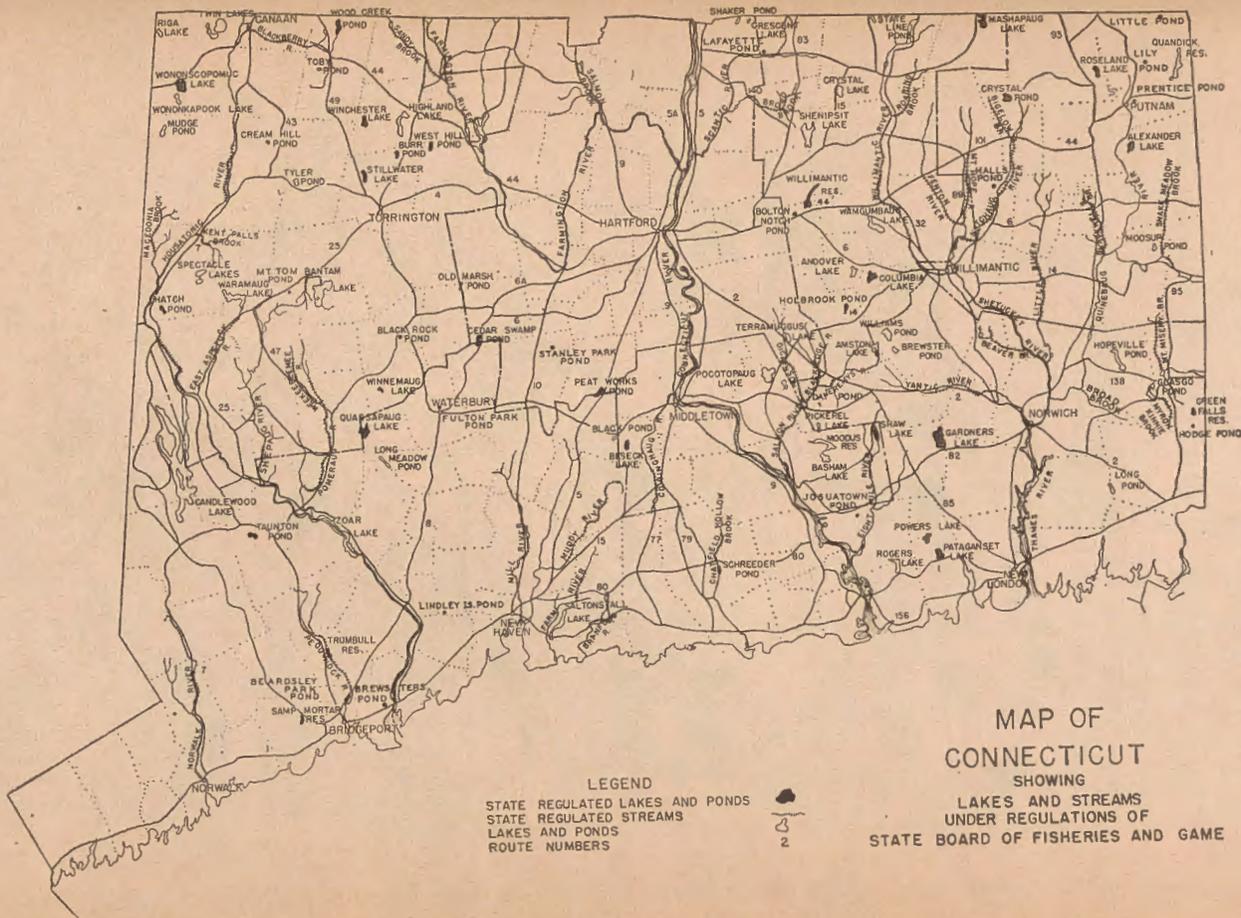
\*\* For residents over sixty-five years of age. Issued on payment of recording fee only. This license is issued for hunting and angling privileges.

† Issued only during last six months of year.

In addition: 16 one-day resident hunting licenses, 74 one-day nonresident licenses and 5 nonresident fox hunting licenses were issued. (Receipts \$248).

**SUMMARY, 1941**

	Number Issued	Total Income	Average Yield per License to Department
Angling Licenses (all types) .....	45,030	\$115,988.38	2.57
Hunting Licenses (all types) .....	39,692	100,018.92	2.52
Trapping Licenses (all types) .....	2,561	6,000.00	2.34
Total .....	87,283	\$222,007.30	2.54



MAP OF  
CONNECTICUT  
SHOWING

LEGEND  
STATE REGULATED LAKES AND PONDS  
STATE REGULATED STREAMS  
LAKES AND PONDS  
ROUTE NUMBERS



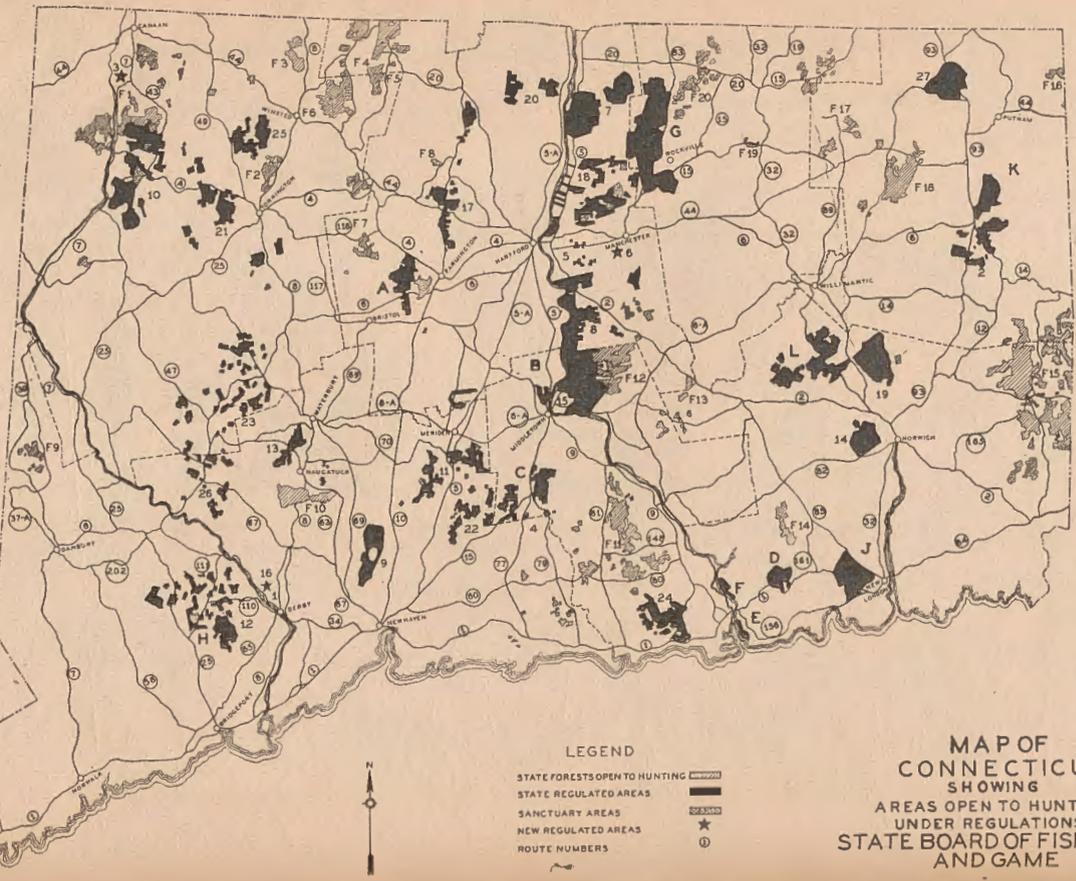
LAKES AND STREAMS  
UNDER REGULATIONS OF  
STATE BOARD OF FISHERIES AND GAME

# Coast Guard Identification Card Required on all Areas Under U. S. Coast Guard Supervision

- REGULATED AREAS**  
PERMIT REQUIRED
- | NO. | NAME   |
|-----|--|
| 1   | ARSDALE FISH AND GAME CLUB                         |
| 2   | BLACKWELL GARD FISH. ASSOC.                        |
| 3   | CARLISLE LARGHERIES                                |
| 4   | BURNHAM FISH AND GAME CLUB AND BURNHAM FARMERS     |
| 5   | CARR, SPENTHORN'S ASSOC. - EAST HARTFORD DIVISION  |
| 6   | COOK, SPENTHORN'S ASSOC. - WEST HARTFORD DIVISION  |
| 7   | EAST WINDSOR FARMERS                               |
| 8   | GLASTONBURY SPORTSMEN'S ASSOC.                     |
| 9   | HAMDEN FISH AND GAME CLUB                          |
| 10  | HADDAM HILL FISH. ASSOC.                           |
| 11  | HEWESSEE FISH AND GAME CLUB AND HEWESSEE FARMERS   |
| 12  | HORDEKIN FISH AND GAME CLUB                        |
| 13  | HADDATUCK FISH AND GAME CLUB                       |
| 14  | HORWICH FISH AND GAME CLUB                         |
| 15  | JONN WARENS HILL FARMERS                           |
| 16  | PORTLAND FARMERS FISH AND GAME CLUB                |
| 17  | LEVINGTON FISH AND GAME CLUB                       |
| 18  | SURREY FISH AND GAME CLUB                          |
| 19  | SPOTT FISH AND GAME CLUB AND SPOTT WINDSOR FARMERS |
| 20  | SPRING FISH AND GAME CLUB                          |
| 21  | SUTFIELD SPORTSMEN'S ASSOC.                        |
| 22  | TORRINGTON FISH AND GAME CLUB                      |
| 23  | WALLINGFORD FISH AND GAME CLUB                     |
| 24  | WILLETTSVILLE FISH AND GAME CLUB                   |
| 25  | WESTBROOK LARGHERIES ASSOC.                        |
| 26  | WITCHAMSTER LARGHERIES                             |
| 27  | WINDSOR FISH AND GAME CLUB                         |
| 28  | WINDHAM COURT A - W. COOPERATION CLUB              |

- STATE FORESTS**
- | NO. | NAME         | LOCATION                 |
|-----|--------------|--------------------------|
| F1  | HOVATONIC    | BRIDGE <i>et al</i>      |
| F2  | PALEMIT      | TORRINGTON               |
| F3  | ALBANY       | COLCHESTER               |
| F4  | TURK         | HARTFORD <i>et al</i>    |
| F5  | FRYER        | BRIDGEWATER              |
| F6  | J.M. LEON    | BRIDGEWATER              |
| F7  | HEPPO        | NEW HARTFORD             |
| F8  | SHREBURY     | SHREBURY                 |
| F9  | PHOENIX      | NEW HARTFORD             |
| F10 | HADDATUCK    | HEPPO FALLS <i>et al</i> |
| F11 | COCKAMUSSET  | CHESHAM <i>et al</i>     |
| F12 | HEMLOCK      | PORTLAND <i>et al</i>    |
| F13 | SALMON RIVER | A. DUNFORD <i>et al</i>  |
| F14 | HEMLOCK      | E. LINE                  |
| F15 | PAINE        | TOLLAND <i>et al</i>     |
| F16 | QUACK        | TORRINGTON               |
| F17 | WINDHAM      | UNION                    |
| F18 | RYE          | WALLINGFORD              |
| F19 | SHREBURY     | SHREBURY <i>et al</i>    |
| F20 | SHERBURY     | WINDHAM <i>et al</i>     |

- STATE LEASED & OWNED SHOOTING GROUNDS**
- | LETTER | AREA                   |
|--------|------------------------|
| A      | FAIRHINGTON            |
| B      | CORNWELL BEARDS        |
| C      | BURNHAM BEARDS         |
| D      | GRAY LIME (CLOSED)     |
| E      | GRAY ISLAND            |
| F      | LEOP'S CAVE            |
| G      | SALMON RIVER (CLOSED)  |
| H      | WINDHAM-BENTON-SHELTON |
| J      | WATERBURY              |
| K      | WINDHAM-BENTON-SHELTON |
| L      | LEOP'S CAVE            |
| M      | LEOP'S CAVE            |



- LEGEND**
- |                               |  |
|-------------------------------|--|
| STATE FORESTS OPEN TO HUNTING |  |
| STATE REGULATED AREAS         |  |
| SANCTUARY AREAS               |  |
| NEW REGULATED AREAS           |  |
| ROUTE NUMBERS                 |  |

**MAP OF CONNECTICUT  
SHOWING  
AREAS OPEN TO HUNTING  
UNDER REGULATIONS OF  
STATE BOARD OF FISHERIES  
AND GAME**

## Game Restoration

### Pheasant Purchase and Distribution

The ringneck pheasant holds the popular favor of a large proportion of the sportsmen of the state, and planning for the purchase, inspection, and distribution of these birds is one of the major activities of the Division of Game Restoration.

State law requires that all purchases must be made through the office of the State Supervisor of Purchases. Since the cost of pheasants purchased is over one thousand dollars, competitive sealed bids are required. This system of purchasing requires a considerable amount of detail work. Complete cooperation has been received from the State Supervisor of Purchases in the procurement of large numbers of pheasants, in various sex ratios, from several breeders, and at different dates.

Allotments for the purchase of pheasants are made for a fiscal year period (July 1 - June 30). Invitations to bid are sent out to the game breeders in the spring of each year and contracts are placed for all the birds that will be needed for distribution in the fall of that year and the spring of the following year. By placing contracts in this manner the breeders are able to plan their production according to the contracts they receive and the Department has reasonable assurance that pheasants will be available for distribution without the necessity and uncertainty of going into the open market for birds. Although this method of contracting for pheasants, on the yearly production of the game breeders, gives the Department reasonable assurance that birds will be available, it does have one disadvantage. Any changes made in the distribution policy that would affect a spring stocking must wait for at least a year before it can be put into effect.

Although pheasants are purchased on a fiscal year basis it seems advisable to report the distribution of birds on a calendar year basis. By reporting in this manner the total number of birds liberated that affect a hunting season is readily available for comparison.

The total pheasant purchase and distribution for the calendar years 1940 and 1941 is presented in Table I. The total pheasant distribution by warden service districts is shown in Table II, and Table III compares the total liberations and unit cost per bird for the two years. In making a comparison of yearly distributions only the regular state purchases should be used because the other birds reported as distributed make up only a small proportion of the total and are variable from year to year.

TABLE I  
PHEASANT PURCHASE AND DISTRIBUTION—YEAR 1940

	Spring (April-May)				Fall (August)				Total			
	Cocks	Hens	Total	Cost	Cocks	Hens	Total	Cost	Cocks	Hens	Total	Cost
Regular State Purchase .....	1725	6015	7740	\$18,849.00	6080	120	6200	\$9,965.25	7805	6135	13940	\$28,814.25
Birds Raised at Prison Farm .....		11	11		20	16	36		20	27	47	
Club's Share of 50/50 Distributions	333	659	992		505	157	662		838	816	1654	
Birds Raised and Liberated by Co- operative Breeders .....					920	867	1787	913.75*	920	867	1787	913.75
Total .....	2058	6685	8743	\$18,849.00	7525	1160	8685	\$10,879.00	9583	7845	17428	\$29,728.00

PHEASANT PURCHASE AND DISTRIBUTION—YEAR 1941

	Spring (April-May)				Early Fall (August-September)				During Season (October-November)				Total			
	Cocks	Hens	Total	Cost	Cocks	Hens	Total	Cost	Cocks	Hens	Total	Cost	Cocks	Hens	Total	Cost
Regular State Purchase ....	1984	6325	8309	\$20,698.78	6038	5924	11962	\$16,828.25	7952	42	7994	\$15,571.75	15974	12291	28265	\$53,098.78
Club's Share of 50/50 Dist. ..	116	397	513		388	230	618		177	157	334		681	784	1465	
Birds Raised and Liberated by Cooperative Breeders .....					1123	1100	2223	814.80†					1123	1100	2223	814.80
Total .....	2100	6722	8822	\$20,698.78	7849	7254	14803	\$17,648.05	8129	199	8328	\$15,571.75	17778	14175	31953	\$53,913.53

\* Cost of 8312 Pheasant Eggs Purchased.

† Cost of 7648 Pheasant Eggs Purchased.

**TABLE II**  
**PHEASANT DISTRIBUTIONS BY WARDEN DISTRICTS — YEAR 1940**

	Spring (April-May)			Fall (August)			Total		Total
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	
I—Litchfield Area .....	295	942	1237	966	176	1142	1261	1118	2379
II—Hartford Area .....	276	973	1249	1061	287	1348	1337	1260	2597
III—New Haven Area ....	355	1077	1432	1179	255	1434	1534	1332	2866
IV—Fairfield Area .....	335	997	1332	1059	53	1112	1394	1050	2444
V—Tolland Area .....	353	1206	1559	1141	156	1297	1494	1362	2856
VI—Windham Area .....	164	586	750	751	103	854	915	689	1604
VII—New London Area ...	176	540	716	808	70	878	984	610	1594
VIII—Middlesex Area .....	94	341	435	547	42	589	641	383	1024
Total .....	2048	6662	8710	7512	1142	8654	9560	7804	17,364
Died in Transit .....	8	23	31	13	3	16	21	26	47
To University of Conn. ....	2		2		15	15	2	15	17
Total .....	2058	6685	8743	7525	1160	8685	9583	7845	17,428

**PHEASANT DISTRIBUTIONS BY WARDEN DISTRICTS — YEAR 1941**

	Spring (April-May)			Early Fall (August-September)			During Season (October-November)			Total		
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total
I—Litchfield Area .....	251	924	1175	852	865	1717	1258	25	1283	2361	1814	4175
II—Hartford Area .....	327	997	1324	1054	1092	2146	983		983	2364	2089	4453
III—New Haven Area ....	316	947	1263	1203	1174	2377	1167	35	1202	2686	2156	4842
IV—Fairfield Area .....	290	903	1193	969	864	1833	1481	114	1595	2740	1881	4621
V—Tolland Area .....	400	1216	1616	1589	1389	2978	1200	13	1213	3189	2618	5807
VI—Windham Area .....	167	639	806	668	642	1310	634		634	1469	1281	2750
VII—New London Area ...	205	644	849	766	776	1542	945	8	953	1916	1428	3344
VIII—Middlesex Area .....	134	429	563	442	450	892	427		427	1003	879	1882
Total .....	2090	6699	8789	7543	7252	14,795	8095	195	8290	17,728	14,146	31,874
Died in Transit .....	6	12	18	6	2	8	30		30	42	14	56
Killed by Dogs at Field Trials	4	11	15				4	4	8	8	15	23
Total .....	2100	6722	8822	7549	7254	14,803	8129	199	8328	17,778	14,175	31,953

TABLE III  
COMPARISON OF LIBERATIONS — 1940-1941

	YEAR 1940				YEAR 1941			
	Regular State Distribution			Average cost per Bird Liberated	Regular State Distribution			Average Cost per Bird Liberated
	Cocks	Hens	Total		Cocks	Hens	Total	
Spring (April-May) .....	1725	6015	7740	\$2.44	1984	6325	8309	\$2.49
Early Fall (August-September) .....	6080	120	6200	1.61	6038	5924	11962	1.41
During Season (October-November)					7952	42	7994	1.95
Total .....	7805	6135	13,940	\$2.07	15,974	12,291	28,265	\$1.88

#### Pheasant Liberation Dates — 1940

During the year 1940 the liberation dates of pheasants followed the same general plan used in previous years. Cock and Hen birds, as supplementary breeding stock, were liberated in the spring (April-May) in the ratio of about one cock to three hens. Young cock birds (12 weeks old) were liberated in the fall (August 20-30) in advance of the hunting season.

#### Pheasant Liberation Dates — 1941

The plan of liberation was changed for the year 1941. Cock and hen birds were again released in the spring (April-May) in the ratio of about one cock to three hens. The early fall (August 20-30) pre-season liberation of 12-week old birds was approximately doubled and the sex ratio was changed from all cocks to equal numbers of cocks and hens. The plan of liberating adult cock birds during the hunting season was begun in 1941. The liberations of cock birds were to be made on Sunday, a non-shooting day, but adverse weather conditions necessitated slight changes in this plan on some occasions.

#### Reasons for Changes in Liberation Plans

Recent studies carried out in Connecticut and neighboring states have shown that the over-wintering hen pheasant is better able to produce and raise a brood the following spring than a spring-stocked hen pheasant. A large number of hen birds was purchased during August of 1941.

Information obtained from regulated permit-required shooting areas showed that in 1940, 71.2% of the total number of pheasants taken during the entire season had been killed by the end of the second Saturday of the shooting season. The weekly liberation of cock birds during the

season was tried in an effort to spread the hunting take of pheasants over a longer period.

From all reports received the pheasant shooting seasons of 1940 and 1941 were satisfactory and the changes in liberation dates in 1941 helped to produce better hunting for a longer period of time during that year than in 1940. However, in both 1940 and 1941 conditions during the breeding season were almost ideal and large numbers of naturally propagated cock pheasants were available to the hunters. During years when there is a relatively poor breeding season for birds in the wild this condition will be reflected in a lower hunter-take during the shooting season.

### Naturally Propagated vs. Stocked Birds

To obtain additional information regarding stocking policies, all the pheasants liberated during the year 1941 were banded with sealed aluminum leg bands. These bands are put on the leg of a bird in such a way that it is practically impossible for them to come off. It seems logical to assume, therefore, that pheasants taken during the year 1941 that were not banded were the result of natural propagation. The extent that natural propagation plays in the success of a hunting season is shown in Table IV.

To obtain the data shown in Table IV a number of Hunting Success Cards were printed. The following questions were asked:

1. Total number of cock pheasants killed during the 1941 hunting season.
2. Number of cock pheasants killed that were banded.
3. Number of cock pheasants killed that were not banded.
4. Number of banded cock pheasants killed that were reported to the Department.
5. Approximate number of hours spent hunting.
6. Do you approve of the policy of liberating cock pheasants during the hunting season?

These cards were passed out at Fish and Game Club meetings and distributed by members of the Advisory Council. The sportsmen were asked to fill out the cards and return them to the Department, but were not asked to sign their names. By this method it was felt that a good cross section of the sportsmen would be reached and the results would give an indication of what took place.

The figures obtained seem to indicate that, when there has been a good breeding season, at least 50% of the total number of pheasants taken during the hunting season are the result of natural propagation.

If these figures present a true picture it is easy to see that the effect of a poor natural breeding season would so reduce the total number of birds bagged that only by an extremely large distribution of birds during the hunting season could the total take be kept at the high level of the past two years.

**TABLE IV**  
**COMPARISON OF BANDED AND UNBANDED COCK PHEASANTS**  
**TAKEN DURING 1941 HUNTING SEASON**

Information Obtained From	Banded Cock Pheasants Reported Taken		Unbanded Cock Pheasants Reported Taken		Total Number of Pheasants Reported Taken
	Number	% of Total	Number	% of Total	
150 Hunting Success Cards Reported by Sportsmen.	317	38.3	511	61.7	828
Patrolmen's Check Sheets on Regulated Shooting Areas (14 areas) . . . . .	289	46.5	333	53.5	622
Total . . . . .	606	41.8	844	58.2	1450

#### Pheasant Banding Study — 1941

The Department has been liberating pheasants in Connecticut since 1908 when it started with a liberation of 88 birds. For the past 33 years liberations have been made at different periods of the year and in varying numbers in an effort to find a suitable liberation plan for Connecticut that would provide enough birds to satisfy the large hunting pressure.

It is a well known fact in game conservation that the cheapest bird to bring to bag is the bird produced by natural propagation. It is also known that in Connecticut, with a 43-day open season, the natural propagation of pheasants will not provide sufficient birds to satisfy the demands of the large hunting pressure. Liberation of pheasants must be continued if pheasant hunting is to be enjoyed and a stocking policy should be aimed at taking full advantage of natural propagation plus maximum results in birds brought to bag from the stockings made.

It has been demonstrated on Private Shooting Preserves that the degree of success of pheasant shooting is in proportion to the amount of money spent. The sportsmen of the state can have pheasant shooting in proportion to the amount of money that they wish to spend for it, but it should be remembered that beyond a certain point the liberation of birds will produce a decreasing return per dollar expended. This may be justified if the increased kill obtained from liberations of large number of birds will provide enough birds brought to bag to satisfy the hunting pressure.

Very little, if any, accurate information is available regarding the results obtained from past stocking policies. The 1941 pheasant stocking program was changed from that used in previous years, and it was decided to band all the birds liberated in 1941 so that a study could be made of the results obtained. Small-scale banding experiments on special areas had been made in the past which provided experience regarding the methods used.

Practically all pheasants liberated in 1941 were banded with an aluminum leg band. These bands were securely fastened around the legs of the birds by sealing them with a special type of pliers. If the band is properly sealed it is practically impossible for it to become detached from the pheasant's leg. Each band has a serial number stamped on it and the lettering "Return Conn. F. & G. Dept." The warden service kept accurate records of where and when each bird was liberated.

Publicity regarding this banding was given out through the newspapers, in the regulated hunting pamphlets, by talks given at Fish and Game Club meetings, and by personal contact of sportsmen by the warden service. All sportsmen were urged to return all bands obtained with a record of the date when and the place where the banded birds were taken.

A total of 17,778 cock pheasants was liberated in 1941 and banding records were kept on 16,067 of these birds. Of the 16,067 banded birds liberated a total of 3,087, or 19.2%, of the bands were returned to the Department.

TABLE I  
RECORD OF COCK PHEASANT STOCKING — 1941

Period	Regular State Distribution	Club's Share of 50/50 Distribution	Birds Raised by	
			Cooperative Breeders	Total
Spring (April-May) .....	1984	116		2100
Early Fall (August-September) .....	6038	388	1123	7549
During Season (October-November) ..	7952	177		8129
Total .....	15,974	681	1123	17,778

RECORD OF BANDED COCK BIRDS LIBERATED  
AND BANDS RETURNED — 1941

Period	Number of Banded Cock Birds Liberated	Bands Returned	% of Bands Returned
Spring (April-May) .....	1463	75	5.1
Early Fall (August-September) .....	6597	934	14.2
During Season (October-November) ..	8007	2078	26.0
Total .....	16,067	3,087	19.2

**TABLE II**  
**TAG RETURNS — SEASON 1941**  
**(Cock Pheasant Liberations and Tag Returns from Fall Distribution Only—1941)**

District	Aug.-Sept. Liberations			Oct.-Nov. Liberations			Total Liberations			% More of During- Season-Liberated Birds Taken than Pre- Season-Liberated Birds
	No Cock Pheasants Liberated	Tags Returned	% Returned	No. Cock Pheasants Liberated	Tags Returned	% Returned	No. Cock Pheasants Liberated	Tags Returned	% Returned	
Litchfield—I .....	739	117	15.8	1230	367	29.8	1969	484	24.6	+14.0
Hartford—II .....	868	82	9.4	904	152	16.8	1772	234	13.2	+ 7.4
New Haven—III ...	819	75	9.2	1168	230	19.7	1987	305	15.3	+10.5
Fairfield—IV .....	960	169	17.6	1450	486	33.5	2410	655	27.2	+15.9
Tolland—V .....	1452	270	18.6	1206	342	28.4	2658	612	23.0	+ 9.8
Windham—VI .....	607	60	10.0	672	132	19.6	1279	192	15.0	+ 9.6
New London—VII..	716	120	16.8	961	313	32.6	1677	433	25.8	+15.8
Middlesex—VIII ....	436	41	9.4	416	56	13.5	852	97	11.4	+ 4.1
Total .....	6597	934	14.2	8007	2078	26.0	14,604	3012	20.6	+11.8

**TABLE III**  
**RECORD OF BANDS RETURNED WITH AND WITHOUT REPORT OF DATE TAKEN — 1941**

District	Aug.-Sept. Distributions				Oct.-Nov. Distributions				Total Distributions			
	Number Returned with Date of Kill	%	Number Returned without Date of Kill	%	Number Returned with Date of Kill	%	Number Returned without Date of Kill	%	Number Returned with Date of Kill	%	Number Returned without Date of Kill	%
I ....	51		66		189		178		240		244	
II ....	41		41		73		79		114		120	
III ....	33		42		106		124		139		166	
IV ....	64		105		183		303		247		408	
V ....	150		120		193		149		343		269	
VI ....	17		43		27		105		44		148	
VII ....	63		57		135		178		198		235	
VIII ....	22		19		12		44		34		63	
Total ..	441	47.2	493	52.8	918	44.2	1160	55.8	1359	45.1	1653	54.9

Tables I and II show the number of bands returned in relation to the number of banded birds liberated. Further study should be made, but one point seems to be definite;—the closer to the hunting season the bird is liberated, the better the chances are that it will be bagged.

An effort was made to obtain information on the length of time the pheasants were in the field before being taken. It was known on what date the birds were liberated, but not all persons sending bands in reported the date that the bird was taken. Table III shows the number and percentage of bands returned with and without information regarding the date of kill.

### Quail

In the fall of 1940 Connecticut had its first open quail season since 1936. Three counties—New London, Middlesex, and New Haven—reported a large enough quail population to warrant a seven day season, October 19–26 inclusive, with a daily bag limit of two birds. The game wardens in these counties reported very few quail killed during this open season. These wardens also reported that many sportsmen were not familiar with the dates of the season and did little quail hunting. Other sportsmen showed a definite feeling against killing quail.

Following the 1940 season the quail population continued to show an increase in New London, Middlesex, and New Haven counties. Another seven day quail season was proclaimed in 1941, November 1–8 inclusive, with a daily bag of three quail and a season bag of twenty birds. Quail reports during the spring of 1942 indicate the numbers of quail to be increasing and extending their range into the southern portion of Tolland and Windham counties.

### Winter Feeding Program

Fifteen tons of whole corn and scratch grain were provided the Warden Service for its 1940–1941 winter feeding program. This grain was distributed to the following agencies and individuals who were tending feeding stations:

#### SUMMARY OF THE WINTER FEEDING PROGRAMS

	1940	1941
Warden Service .....	316 Stations	467
Sportsmen's clubs, sponsoring regulated shooting areas .....	83	" 102
Civilian Conservation Corps .....	15	" ...
4-H Clubs .....	85	" 77
Boy Scouts .....	45	" 5
Future Farmers of America .....	4	" 3
High School Clubs .....	12	" ...
Garden Clubs and Fire Stations .....	2	" 3
Individual Cooperators .....	107	" 27
Totals	669	" 684

## SUMMARY OF QUAIL PURCHASE AND DISTRIBUTION — 1940-1941

	YEAR 1940				YEAR 1941			Total Cost
	Cocks	Hens	Total	Total Cost	Cocks	Hens	Total	
Spring .....	362	363	725	\$2,300.50	423	435	858	\$2,302.50
Fall .....	102	99	201	309.60	733	749	1,482	1,998.00
Total.....	464	462	926	\$2,610.10	1,156	1,184	2,340	\$4,300.50

DISTRIBUTION, 1940	SPRING			FALL			TOTAL		
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total
District III—New Haven Area .....	155	140	295	37	37	74	192	177	369
District VI—Windham Area .....	7	7	14				7	7	14
District VII—New London Area .....	119	138	257	40	37	77	159	175	334
District VIII—Middlesex Area .....	76	72	148	25	25	50	101	97	198
Total .....	357	357	714	102	99	201	459	456	915
Died in Transit .....		1	1					1	1
To University of Connecticut .....	5	5	10				5	5	10
Total .....	362	363	725	102	99	201	464	462	926

DISTRIBUTION, 1941	SPRING			FALL			TOTAL		
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total
District III—New Haven Area .....	154	159	313	266	266	532	420	425	845
District VI—Windham Area .....	6	6	12				6	6	12
District VII—New London Area .....	172	180	352	341	356	697	513	536	1049
District VIII—Middlesex Area .....	87	86	173	125	125	250	212	211	423
Total .....	419	431	850	732	747	1479	1151	1178	2329
Died in Transit .....	4	4	8	1	2	3	5	6	11
Total .....	423	435	858	733	749	1482	1156	1184	2340

## Grain Planting Program

The cooperative grain planting program was again in operation during the spring of 1941. This program provides pheasant stocking as credit for the planting of grain patches. Twelve clubs were provided with enough grain to plant thirty acres. An analysis of this program over the four year period in operation has shown that its greatest value has been from the educational standpoint. There have been few entirely successful plantings primarily because of inadequate or faulty applications of fertilizer. However, each club participating has had enough success to demonstrate to its members the value of such plantings in holding pheasants in areas and providing food during critical periods.

The Warden Service, during the spring of 1941, made contractual agreements with landowners to plant forty-four acres of grain on refuge

areas located in Department-regulated shooting grounds. The agreements included the rental of land, plowing, planting, and cultivation. The department furnished the seed and fertilizer. The unit cost for these plantings was \$35.00 per acre. The majority of these plantings were made in Connecticut River Valley towns north of Hartford where land rental was relatively expensive and soil fertility high. The returns from these plantings were worthwhile, and the department doubled the program in 1942, when 89 acres of corn and buckwheat were planted in refuge areas.

#### GRAIN PLANTINGS — 1942

<i>District</i>	<i>Acres of Corn</i>	<i>Acres of Small Grain</i>	<i>Total Acreage</i>	<i>Total Cost</i>
I	1.00	7.75	8.75	\$ 311.00
II	7.25	22.37	29.62	1,015.00
III	3.5	3.75	7.25	355.00
IV	2.0	.....	2.00	100.00
V	1.75	18.50	20.25	542.50
VI	4.00	4.00	8.00	230.00
VII	....	8.00	8.00	173.00
VIII	1.12	4.12	5.25	175.00
	20.62	68.49	89.11	\$2,901.00

Unit cost — \$32.55 per acre

**Snowshoe Rabbits.** During January and February of 1941 the Department purchased two hundred and sixty-four wild-trapped snowshoe rabbits from dealers in New Brunswick, Canada. Three sportsmen's clubs purchased on a fifty-fifty basis an additional one hundred and seventy-one snowshoe rabbits for release during this period. The majority of these animals were stocked in covers where native snowshoe rabbits were already known to exist. Each rabbit was ear-tagged to determine its ability to survive Connecticut conditions. Because of recent tularemia fatalities, the State Board of Health and the Commissioner of Domestic Animals have advised that this program be discontinued in 1942.

The following table summarizes snowshoe rabbit distributions for the year 1940-1941:

TABLE IV

January—1940	
Regular State Distribution .....	95
50/50 Cooperative Distribution:	
State's Share ... ..	53
Club's Share .....	53

Distribution — District I, Litchfield Area .....	175
Died, Holding Overnight or in Transit .....	26
	<hr/>
	201

**January-February—1941**

Regular State Distribution .....	93
50/50 Cooperative Distribution:	
State's Share .....	171
Club's Share .....	171
	<hr/>
	435

Distribution—District I—Litchfield Area .....	222
"    II—Hartford Area .....	105
"    V—Tolland Area .....	34
"    VI—Windham Area .....	74
	<hr/>
	435

**Cottontail Rabbits.** The interest in this program in other states can be laid, for the most part, to the importation of cottontails from Missouri and Kansas for restocking purposes. Connecticut has always forbidden importation of rabbits from the west because of the fear of introducing tularemia or rabbit fever in our native stock. This policy seems to have been wise, as up until 1940 there had not been a single positive case of tularemia reported in the State. The State Health Department now recommends that all rabbit importations be discontinued. This turn of events leaves Connecticut with but one alternative — that of redistributing our own cottontail rabbit population. Pennsylvania has progressed far in this redistribution work. Thousands of rabbits are live-trapped or taken by ferrets annually from closed lands (game refuges, State parks, public water supply watersheds, nurseries, etc.) for release on public hunting grounds. These native rabbits have proven more suitable for restocking than those imported from other states.

**Tularemia.** The State Department of Health has reported two fatalities from the disease tularemia or rabbit fever. One fatality occurred in December 1940, the other during October 1941.

This disease is associated primarily with rabbits and small rodents. However, grouse, fox and most of the fur-bearers have been known to harbor the disease. The pheasant and dog are two animals which seem to be immune.

Minnesota has studied this disease in the wild for a number of years. These studies list three points for the hunters' protection against tularemia:

1. Hunt rabbits only after cold weather is well established — late November, early December. Do not handle rabbits during the spring and early fall months.

2. Game animals, particularly rabbits, which act unusually slow or tame should be killed and disposed of. Regardless of tularemia, it is always best to take animals that show vigor and can be taken only with difficulty.
3. Cleanliness and sanitation in preparing game — Wear rubber gloves, use disinfectants. Cook game thoroughly.

**Raccoon Program.** In the summer of 1940, the Department started a cooperative raccoon propagation program with sportsmen's clubs. This program provides cash returns to those sportsmen's clubs which will provide the proper equipment and carry on the propagation of raccoon. As this program expands, Connecticut raccoon hunters can be assured of a supply of raccoon for restocking purposes. Three clubs released thirty-six raccoons under this program in August of 1940. Eight sportsmen's clubs have released over one hundred and eighty raccoons during 1941 in Connecticut with this program. The raccoon colony at Storrs has been increased. All the raccoon liberated during this period have been ear-tagged to determine their ability to live and movements following release.

The following is a summary report of raccoon distributed during the biennium:

**RACCOON LIBERATIONS**  
1940-1941

	<i>Spring</i>				<i>Fall</i>				<i>Total</i>	
	<i>Reg. State</i>		<i>Fifty-Fifty</i>		<i>Reg. State</i>		<i>Fifty-Fifty</i>		<i>Total</i>	
	1940	1941	1940	1941	1940	1941	1940	1941	1940	1941
District I										
Litchfield Area					20		10		30	
District II										
Hartford Area					10		8	15	18	15
District III										
New Haven Area	14			13			13	38	27	51
District IV										
Fairfield Area							33			33
District V										
Tolland Area					9		2	5	11	5
District VI										
Windham Area	17						2	7	19	7
District VII										
New London Area					15		9	25	9	40
District VIII										
Middlesex Area							2	5	2	5
TOTAL	31		13		19	35	36	138	86	186

**Deer.** Under the provisions of the deer law as amended in 1941, permits to kill deer are issued by this Department to those citizens who own or

lease land used for agricultural purposes, to the lineal descendants of such owners and lessees, and to their regular employees. The term "regular employee" is defined as any person employed for at least ninety days during a twelve-month period. The classes described above may kill any number of deer of either sex with rifle or shotgun at all seasons of the year. If a landowner is not a resident of this State a hunting license will be required of him and of his lineal descendants. If a lessee does not actually reside on the property leased for agricultural purposes, a license will be required for him and for his lineal descendants. Hunting licenses are also required for the regular employees. No charge is made for the permits issued to landowners, lessees, their lineal descendants and their regular employees.

A new class of permittees was created by the 1941 law. These permittees are to be selected by the landowners and lessees who may request in writing that permits be issued to not more than three persons to allow them to hunt deer with a shotgun on property owned or leased for agricultural purposes. These permits are issued at a fee of \$1.00 each for the daylight hours of the months of December and January and allow the taking of one deer on each permit. These permittees must have a hunting license.

The Attorney General has ruled, ". . . that shareholders in a corporation cannot be considered as owners of the corporate property and therefore are not entitled to owners' permits under Section 552f. A corporation which owns or leases land may secure permits for not more than three persons during any season to allow them to hunt deer with a shotgun on its property or property leased by it for agricultural purposes. . . . any regular employee of a land-holding corporation should be allowed a permit to take deer as provided in Section 551f, where the land is used for agricultural purposes."

The regulations concerning the taking of deer under this law are given on the blank used for application which may be obtained at the office of the Fish and Game Department.

A tabulation of the kill by warden districts for the years 1940 and 1941 is given with this report. The number reported taken in 1941 is reduced by 324 from the report of 1940. The number of permits issued under the changes in laws and regulations in the past four years and resulting reported kills are given below:

	1938	1939	1940	1941
Total kill .....	398	663	758	434
Permits issued .....	310	2,224	1,562	2,108
Permittee kill .....	154	382	371	193
Auto kill .....	111	114	149	119
Reported Illegal .....	61	80	118	35

The increased number of permits issued in 1941 does not appear to have resulted in the expected increased kill. The number reported killed by automobile in 1941 is below the average for the four years. The estimate of the total deer herd made by the Warden Service for 1941 is 5,700, a reduction from the previous estimate. It is probable that the relatively high kills for 1939 and 1940 have accomplished the needed reduction of the herd.

The present law provides an orderly method of harvesting the deer crop without the danger to human life associated with a conventional open season. The system appears to be working satisfactorily from the standpoint of the landowner and the licensed permittee. As the present law becomes more widely known, it may have the effect of reducing illegal kill of deer.

Deer permittees, upon making a deer kill, return to the department a form card bearing information pertaining to the animal taken. The information includes deer's sex and weight, whether dressed or not dressed, the actual weight or an estimated weight. The following table summarizes this information for the years 1939-1942.

#### DEER ACTUAL AND ESTIMATED\* WEIGHTS

	1939	1940	1941	1942
Bucks not dressed, estimated . . .	141.8	142.8	159.2	143.4
Bucks not dressed, actual . . . . .	176.9	145.7	157.9	145.1
Does not dressed, estimated . . . .	104.0	108.3	122.1	120.4
Does not dressed, actual . . . . .	104.7	133.1	103.1	141.4
Bucks dressed, estimated . . . . .	104.3	95.2	105.0	99.1
Bucks dressed, actual . . . . .	115.1	99.8	91.2	90.2
Does dressed, estimated . . . . .	73.7	68.5	85.6	74.7
Does dressed, actual . . . . .	64.9	78.2	69.3	82.3
All bucks (not dressed) actual weight . . . . .				156.0
All does (not dressed) actual weight . . . . .				122.3
All bucks (dressed) actual weight . . . . .				100.5
All does (dressed) actual weight . . . . .				74.4
All deer (not dressed) actual weight . . . . .				143.5
All deer (dressed) actual weight . . . . .				91.2

\*Vermont deer studies have shown that their deer hunters overestimated deer weighing up to 150 lbs. by 10%, and those weighing over 150 lbs. were overestimated by 5%. The estimated figures above have been corrected by this method. Progress Report, Vermont Pittman-Robertson Project IR 1940.

## REPORT OF DEER KILLED SHOWING CAUSE OF DEATH

1940

District	Permittee	Accident	Trains	Dogs	Found			Total	
					Autos	Injured	Unknown		
Litchfield Area ...	137	4	2	23	31	6	6	20	229
Hartford Area ...	9	2		5	9	1	2	7	35
New Haven Area.	39	1		2	22	6	5	6	81
Fairfield Area ...	18	3		3	37	2	2	8	73
Tolland Area ....	36	1		4	8	1		12	62
Windham Area ..	78			7	20	3	16	51	175
New London Area	20	2		2	6			7	37
Middlesex Area ..	34	1			16	2	6	7	66
Total .....	371	14	2	46	149	21	37	118	758

1941

District	Permittee	Accident	Trains	Dogs	Found			Total	
					Autos	Injured	Unknown		
Litchfield Area ...	75	5		9	23	8	3	13	136
Hartford Area ...	2	3		1	5			1	12
New Haven Area.	8	1	1	1	17	5	4	2	39
Fairfield Area ...	11	2		7	21		3		44
Tolland Area ....	23	1	2	3	12	3		2	46
Windham Area ..	44	1	1		20	3	2	13	84
New London Area	12		1		6			1	20
Middlesex Area ..	18				15	4	13	3	53
Total .....	193	13	5	21	119	23	25	35	434

## State-Regulated Permit-Required Shooting Areas

The permit-required regulated shooting area plan has been in operation in Connecticut since 1933. The thirty-one areas now under regulation total almost 150,000 acres. A summary of the pheasants stocked, permits issued and returned and game reported taken for the 1940 and 1941 seasons is shown in Table I and Table II.

Beginning with the 1940 season, the Department developed and used a new type of permit which was made out in duplicate and the original and carbon copy returned to the Department at the end of the season. With this new permit more accurate information could be obtained regarding the hunting pressure and game kills.

In 1940 there was a total of 7,620 permits issued of which 6,671 or 87.5% were returned with a record of the game taken. During the 1941 season a total of 10,200 permits was issued and 8,617 or 84.5% were returned.

### **Daily Permit Holders Returned Larger Percentage of Permits**

The members of clubs which sponsor a regulated shooting area are given a season permit. In other words, the club members have permission to hunt on the area at any time during the entire season. In some cases, the landowner will issue a permit that is good for the entire season in those areas which do not have a sponsoring club. Daily permits that allow the holders to hunt on the day for which the permit was issued are obtainable in most cases from several different places, such as Town Clerks' Offices, fire houses, stores, etc., located strategically throughout the areas.

Reference to Table I and Table II will show that the sportsmen obtaining daily permits were more cooperative in returning their permits than those who obtained season permits.

### **Season Permit Holders Obtain Most of Game Taken**

Over 80% of the game reported taken during the 1940 and 1941 seasons was obtained by the holders of season permits, although they reported only 34.4% of the total number of permits issued in 1940 and 32.8% in 1941.

Table III shows a comparison of season and daily permit holders reported take of the six leading game species taken during the 1940 and 1941 seasons.

### **About 50% of the Daily Permit Holders Hunt on Saturday**

The hunting pressure of daily permit holders remains rather constant during the week and takes a decided jump on Saturday. This was found to be true for each month in the season and the totals for the 1939, 1940 and 1941 seasons do not vary to any great extent.

TABLE I  
 REPORT ON REGULATED SHOOTING — SEASON OF 1940  
 Twenty-nine Areas — 142,250 Acres

Pheasants Liberated	Cocks	Hens	Total
Spring .....	723	2323	3046
Fall .....	2651	55	2706
Total .....	3374	2378	5752

	Season Permits	Daily Permits				Total Season and Daily Permits
		Oct.	Nov.	Dec.	Total	
Permits Issued .....	2625+*	2172	2393	430	4995	7620+
Permits Returned .....	1942	2055	2256	418	4729	6671
% Returned .....	74.0	94.6	94.3	97.2	94.7	87.5

GAME KILLED

Pheasants .....	2848	481	134		615	3463
Grouse .....	972	82	114		196	1168
Quail .....	10	45	1		46	56
Woodcock .....	686	86	72		158	844
Ducks .....	756	54	20	5	79	835
Squirrels .....	3174	639	269		908	4082
Rabbits .....	5536		1064	259	1323	6859
Jack Rabbits .....	10		2		2	12
Snowshoe Rabbits .....	26					26
Hares .....	12					12
Raccoon .....	42	6	9		15	57
Fox .....	98	3	3	1	7	105
Muskrats .....	98					98
Mink .....	2					2
Weasel .....	4					4
Woodchucks .....	60		1		1	61
Skunk .....	11					11
Crow .....	276	48	22		70	346
Owl .....	2					2
Hawk .....	28	3	1		4	32
Predators .....	113	7	4		11	124
Miscellaneous .....	11			1	1	12

\* No record of number of season permits issued on Watertown and Woodbury areas.

**TABLE II**  
**REPORT ON REGULATED SHOOTING—SEASON OF 1941**  
**Thirty-two Areas — 149,100 Acres**

Pheasants Liberated	Cocks	Hens	Total
Spring .....	885	2874	3759
Fall (August-September) .....	2760	2619	5379
During Season .....	3213	73	3286
<b>Total .....</b>	<b>6858</b>	<b>5566</b>	<b>12,424</b>

	Season Permits	Daily Permits					Total Season and Daily Permits
		Oct.	Nov.	Dec.	Jan.	Total	
Permits Issued .....	3348+*	2750	3493	593	16	6825	10,200+
Permits Returned ..	2312	2534	3227	530	15	6305	8,617
% Returned .....	69.1	92.1	92.4	89.4	93.8	92.0	84.5

**GAME KILLED**

Pheasants .....	3965	517	493	19	1029	4994
Grouse .....	909	104	168		272	1181
Quail .....	18		19		19	37
Woodcock .....	911	177	15		192	1103
Ducks .....	952	16	13		29	981
Squirrels .....	2883	440	320		760	3643
Rabbits .....	5924		985	306	7	1298
Jack Rabbits .....	2		4			4
Snowshoe Rabbits ..	26		6			6
Hares .....	11					11
Raccoon .....	23	1	1			2
Fox .....	124	4	3	1		8
Muskrats .....	97					97
Mink .....						
Weasel .....	4	1				1
Woodchucks .....	20	1				1
Skunk .....	4					4
Crow .....	171	25	15			40
Owl .....	11		1			1
Hawk .....	55	7	4			11
Predators .....	199	5	4			9
Miscellaneous .....	17	2	2	1		5

\* No record of number of season permits issued on Watertown, Woodbury and Durham areas.

**TABLE III**  
**COMPARISON OF TAKE BY DAILY AND SEASON PERMITTEES**

Species	1940 SEASON					1941 SEASON				
	Total Reported Kill	<i>Daily Permits</i> No. Killed    % of Total		<i>Season Permits</i> No. Killed    % of Total		Total Reported Kill	<i>Daily Permits</i> No. Killed    % of Total		<i>Season Permits</i> No. Killed    % of Total	
Pheasants .....	3463	615	17.8	2848	82.2	4994	1029	20.6	3965	79.4
Grouse .....	1168	196	16.8	972	83.2	1181	272	23.0	909	77.0
Woodcock .....	844	158	18.7	686	81.3	1103	192	17.4	911	82.6
Ducks .....	835	79	9.5	756	90.5	981	29	3.0	952	97.0
Squirrels .....	4082	908	22.2	3174	77.8	3643	760	20.9	2883	79.1
Rabbits .....	6859	1323	19.3	5536	80.7	7222	1298	18.0	5924	82.0
Total .....	17,251	3279	19.0	13,972	81.0	19,124	3580	18.7	15,544	81.3

**TABLE IV**  
**PERCENTAGE OF TOTAL OF DAILY AVERAGE**  
**NUMBER OF DAILY PERMITS ISSUED**

<i>Day</i>	<i>1939</i>	<i>1940</i>	<i>1941</i>
Monday	9.1	15.5	13.3
Tuesday	7.2	8.8	12.1
Wednesday	11.2	9.1	10.4
Thursday	11.3	9.0	12.7
Friday	17.0	11.8	9.2
Saturday	44.2	45.8	42.3
Total	100.0%	100.0%	100.0%

### Approximately 50% of Daily Permits Issued by 13th Day of Season

The first two weeks of the upland bird season received about 50% of the total hunting pressure of daily permit holders during 1939 and 1940. In 1939, 50.0% of the total number of daily permits issued during the season were issued by November 4th. During the same thirteen-day period, not including Sundays, in 1940 a total of 49.8% of the daily permits had been issued. For the same period in 1941, a total of 43.0% had been issued.

### Of the Total Pheasant Kill Reported by Daily Permit Holders 71.2% Was Taken by the Seventh Day of the Season in 1940

Table VI shows the percentage of the total number of pheasants taken that had been obtained each week and also the cumulative percentage taken weekly. During the 1940 season, 71.2% of the total number of pheasants that were to be taken by daily permit holders during the season had been taken by the end of the second Saturday. In an effort to spread the hunting over a longer period of time during the 1941 season, the plan of pheasant distribution was changed and birds were liberated each week during the season. The new distribution plan appears to have had the desired effect of spreading the hunting over a longer period of time as only 39.1% of the total number of pheasants taken by daily permit holders had been taken by the end of the second Saturday during 1941.

### All Pheasants Taken by 21.2% of Hunters

The records from regulated shooting areas show that all the pheasants taken on the regulated areas during the 1941 season were taken by only 21.2% of the permit holders.

TABLE V

The Accumulated Number of Daily Permits Issued by Weeks and the Percentage this Represents of the Total Number Issued for the Season

1939 SEASON				1940 SEASON				1941 SEASON						
Day	Date	Permits Issued During Week	Cumulative Total	% of Total Number Issued	Day	Date	Permits Issued During Week	Cumulative Total	% of Total Number Issued	Day	Date	Permits Issued During Week	Cumulative Total	% of Total Number Issued
Fri., Oct.	20..	304	304	9.5			38					44		
Sat., Oct.	21..	334	638	19.9	Sat., Oct.	19..	585	623	15.1	Sat., Oct.	18..	727	771	12.4
Sat., Oct.	28..	497	1135	35.5	Sat., Oct.	26..	967	1590	38.4	Sat., Oct.	25..	1195	1966	31.6
Sat., Nov.	4..	466	1601	50.0	Sat., Nov.	2..	472	2062	49.8	Sat., Nov.	1..	706	2672	43.0
Sat., Nov.	11..	382	1983	62.0	Sat., Nov.	9..	611	2673	64.6	Sat., Nov.	8..	880	3552	57.1
Sat., Nov.	18..	372	2355	73.6	Sat., Nov.	16..	493	3166	76.5	Sat., Nov.	15..	789	4341	69.8
Sat., Nov.	25..	254	2609	81.5	Sat., Nov.	23..	417	3583	86.6	Sat., Nov.	22..	725	5066	81.5
Sat., Dec.	2..	256	2865	89.5	Sat., Nov.	30..	206	3789	91.5	Sat., Nov.	29..	593	5659	91.0
Sat., Dec.	9..	121	2986	93.3	Sat., Dec.	7..	65	3854	93.1	Sat., Dec.	6..	258	5917	95.2
Sat., Dec.	16..	89	3075	96.1	Sat., Dec.	14..	129	3983	96.2	Sat., Dec.	13..	70	5987	96.3
Sat., Dec.	23..	67	3142	98.2	Sat., Dec.	21..	55	4038	97.6	Sat., Dec.	20..	108	6095	98.0
Sat., Dec.	30..	57	3199	100	Sat., Dec.	28..	66	4104	99.2	Sat., Dec.	27..	84	6179	99.4
					Thurs., Dec.	31	35	4139	100.0%	Wed., Dec.	31..	38	6217	100.0%

TABLE VI

1940 SEASON				1941 SEASON			
Day	Date	% of Total No. Taken Each Week	Cumulative % of Total No. Taken	Day	Date	% of Total No. Taken Each Week	Cumulative % of Total No. Taken
Saturday, October	17.....	39.5	39.5	Saturday, October	18.....	21.7	21.7
Saturday, October	26.....	31.7	71.2	Saturday, October	25.....	17.4	39.1
Saturday, November	2.....	11.0	82.2	Saturday, November	1.....	12.0	51.1
Saturday, November	9.....	9.4	91.6	Saturday, November	8.....	14.5	65.6
Saturday, November	16.....	4.3	95.9	Saturday, November	15.....	12.6	78.2
Saturday, November	23.....	1.8	97.7	Saturday, November	22.....	14.3	92.5
Thursday, November	28.....	2.3	100	Saturday, November	29.....	5.4	97.9
				Saturday, December	6.....	2.1	100

TABLE VII

	Total Number of Permits Used for Tabulation	Number Reporting the Taking of any kind of Game	% of Total	Number Reporting the Taking of Pheasants	% of Total	Number Reporting the Taking of No Game	% of Total
Daily Permits	5598	1705	30.5	627	11.2	3893	69.5
Season Permits	2014	1354	67.2	989	49.1	660	32.8
Total	7612	3059	40.2	1616	21.2	4553	59.8

About 50% of the season permit holders obtained pheasants, while only 11.2% of the daily permit holders obtained birds. A total of 67.2% of the season permit holders took some kind of game, and 32.8% took no game, while 30.5% of the daily permit holders took some kind of game and 69.5% of them took no game.

#### Season Permit Holders Spend More Time in Field

The permit holders do not all report the time spent hunting, but during the 1941 season 2045 reported a total of 24,177 hours in the field. The daily permit holders averaged a total of 3.9 hours each and the season permit holders averaged a total of 24.3 hours each.

TABLE VIII

1941 Season	Number Reporting	Total Number of Hours Spent Hunting	Average Number of Hours Spent Hunting
Daily Permits . . . . .	1251	4876¾	3.9
Season Permits . . . . .	794	19,300¼	24.3
Total . . . . .	2045	24,177	11.8

#### Comparison of State-Leased and State-Regulated Areas

Twenty-five hundred acres have been added to the State-leased shooting grounds (hunting permitted) in the towns of Ellington and Somers during the spring of 1941. The acreage under this plan now totals nearly thirty thousand acres.

A brief analysis of the State-leased and State-regulated shooting programs is outlined below to present their relative values:

**State-Leased Shooting**

1. Cost of hunting rights 5 cents to 10 cents per acre per year.
2. Patrol costs per acre are equal to regulated shooting.
3. Poster costs per acre equal to regulated shooting.
4. Easier to administer. Landowners better satisfied, no sponsoring agent (sportsmen's club) involved.
5. No control of hunting pressure.
6. No kill records to determine maximum management policies.
7. In brief, entire plan is of a more permanent nature, restricted in extent, due to annual hunting rights costs, more satisfactory to landowners, easier to administer but more difficult to determine maximum game production procedures.

**State-Regulated Shooting**

1. No cost for hunting rights.
2. Patrol costs per acre are equal to leased shooting.
3. Poster cost per acre equal to leased shooting. Actual posting cost often cheaper since sponsoring agent gives aid.
4. More difficult to administer, landowners not as well satisfied. Problems with sponsoring agent occur.
5. Hunting pressure controlled by issuance of permits.
6. Return of permits useful in the regulation of hunting pressure and determination of management policies.
7. In brief, entire plan of a more temporary nature, relatively unlimited in extent, less satisfactory to landowners yet ideally adapted to local landowner-sportsmen's problems when funds for leasing are not available, more difficult to administer yet better suited for determining maximum game production procedures.

**Pittman-Robertson Program**

Federal funds for this work were sharply reduced during the biennium, being \$7,196.33 for the fiscal year 1941-1942 and \$3,044.43 for 1942-1943. The work at present being carried on is dependent on unspent funds from the larger appropriation and will spend a more considerable share of the current appropriation than ever before, hence further curtailment of the work will be necessary even if federal appropriations remain at the present level.

Project I-R, Ruffed Grouse Investigation, was carried out on parts of three state forests during the first year and a half. Due to the necessity for conserving travel, the work at Voluntown has been discontinued. The forests used were Tunxis, East Hartland; Cockaponset, Haddam; and Pachaug, Voluntown.

Estimates of the grouse population on one thousand acres in each of the forests are made four times yearly. On each forest five hundred of the one thousand acres are being worked by methods assumed to be favorable for grouse. The other five hundred acres are left untouched so that the value of work done may be judged by comparison.

One feature of the work on this project—food habits studies—is adding materially to knowledge of grouse foods.

Project 3-R, Pheasant Mortality and Nesting Success, was carried out on private land at Canton Center beginning in January, 1941 and being discontinued on June 30, 1942.

A report of the findings there and a comparison with similar projects in neighboring states is being prepared and an abstract of this report is given here.

Project 4-R, Seed Stock Refuge Investigation, is using most of the eastern half of the town of Wallingford. Work was started on October 1, 1941. After the hunting season of 1942 it will be possible to make comparisons of hunting pressure and take. Management work has consisted of the location and posting of sixteen refuge areas, each containing a food planting. Due to the opening of other land previously closed, these refuges have resulted in a reduction of less than ten per cent in open land. This study area is designed to test the efficacy of seed stock refuges in increasing the natural production of pheasants and decreasing the drift of stocked birds.

#### Abstract of Report on Pheasant Project 3-R

Findings, conclusions and a discussion are given of eighteen months of study of the pheasant population on about five hundred acres of pheasant territory in Canton Center.

Production on the area for the one breeding season was from four released cocks, fifteen released hens and ten resident hens. Average clutch of all nests was ten eggs; average hatch of successful nests was 8.5 chicks; the known nesting success was 63%. At least one hundred chicks were hatched on the area of which thirty-three were present on September 30th in a ratio of two cocks to one hen.

Mortality is given by causes, amounts and seasons. Hunting take and related activities resulted in 56% of kills found the first year, and was the chief cause of reduction in population, followed by hawks, cats, foxes, automobiles, farming activities, dogs and miscellaneous. The amounts of mortality vary with the season of the year and the birds considered, whether resident or stocked. In each of three of the eighteen months more than 30% of the population on the first of the month was gone the first of the following month. These months were May, 1941, November, 1941 and April, 1942. The rate of mortality for natives for the first ten months of 1941 was one bird lost every twenty-one days. For the first six months of 1942 native birds were reduced one bird every twenty-three days. Losses the first sixty days after releases on various dates and losses for the same sixty days for adult natives were as follows: April 16, 1941 — one bird every nine days, natives one every twelve days; August 21, 1941 — one bird every seven days, natives none; February 6, 1942 — one bird

every ten days, natives one every twenty days; March 24, 1942 — one bird every seven days, natives one every twenty days.

Adult mortality follows a very definite seasonal pattern, being none or very light during the winter months of December, January and February and rising in March to a peak in April or May, falling sharply in June, continuing still quite heavy in July, but declining in August, September and to the opening of hunting in October. About 45% of the annual loss is spread over this period. During the hunting season 55% of the annual loss occurred. All cocks on the area were either taken or driven off and nearly half the hens present at the beginning of the season were driven off.

Seventy-seven men spent  $242\frac{1}{2}$  hours hunting the forty-five cock pheasants on the area and bagged thirty-seven. Twenty men, 26% of the hunters, bagged all these birds, averaging six hours afield per man against 2.2 hours afield for unsuccessful hunters and 3.3 man-hours per bird bagged.

Releases of cock birds during the hunting season were 87% bagged; one mid-season release, however, was only 50% taken, the balance being driven off. These releases provided 38% of the total bag. Forty per cent of the cocks stocked in August were bagged, providing 11% of the bag. One April stocked cock was bagged. Yearling cocks, hatched and raised on the area, were 82% taken and provided 49% of the bag.

Conclusions from the findings at Canton were compared with the findings of pheasant projects in Rhode Island, New Hampshire, Massachusetts and New York. In the light of these other findings, the needs for further study and applications of the conclusions to the State's pheasant management program are discussed.

Most factors of production are substantially the same elsewhere as at Canton and show the native hens slightly superior to stocked hens. Two basic factors of production, nesting success and juvenile losses, present wide variations and deserve further study. Estimates of a 50%–60% nesting success and a 50%–60% juvenile survival seem reasonable working assumptions from the findings of all projects.

Seasons of losses and amounts at Canton follow closely those found elsewhere. The causes of this mortality vary widely on all projects without affecting the amounts and seasons.

Hunting at Canton and on the areas which were compared takes upwards of 80% of the cocks and seems to produce about a 40% reduction in hens through differing causes.

The factors of production and mortality on the area were the primary consideration of the work, but the operation of these factors on native and various groups of stocked birds provides an opportunity to compare

these groups. It appears that spring liberations of breeding stock might safely be made in a ratio of one cock to five hens. When liberations are made in the early spring they are subject to a heavy and prolonged period of loss. Such liberations should survive better and produce the greatest number of cocks at the hunting season if made just prior to June first. Findings at Canton and of projects of four neighboring states do not favor August liberations, either to furnish cocks for hunting or hens as breeding stock. The liberation of cocks during the hunting season offers an opportunity to increase the proportion of hunters that bag birds where hunting pressure is sufficiently heavy and natural production too small to meet the demand.

### **The Litchfield-Morris Wildlife Sanctuary**

This sanctuary in the towns of Litchfield and Morris is made available through the generosity of Alain C. White and Miss May W. White. Funds provided by these donors are administered by this Department in operating a game management program on the sanctuary area. Miss May W. White died in 1941. Her passing brought to an end the career of one sincerely interested in wildlife conservation and one of the most active supporters of the conservation movement in this State.

Since June 1940 Mr. W. J. Frank has been in charge of the game management program on the sanctuary. The principal activity of this program has been research aimed at the improvement of wildlife management.

#### **I. Check Area**

A 760-acre check area divided into nineteen forty-acre blocks has been surveyed and marked in the field. The lines which measure 12.35 miles in length were established with a hand compass and surveyor's tape. The intersections of the survey lines have been marked with signs to facilitate the location of field observations. The area was established in order to provide for a systematic monthly census of the animal population on the area.

Up to September 1, 1941, 968 observations had been made on twenty-four species of wildlife.

#### **II. Ruffed Grouse Research**

Since the ruffed grouse is the most important forest game bird in Connecticut, it has been the chief subject of interest on the census area described above. An effort has been made to determine the number of birds present on the check area and the "cruising radius" or "territory" of the single bird.

In the spring of 1941 a census of the number of drumming male grouse was obtained on the check area. The "drumming terri-

tory" of the birds was determined by repeated observations. A few grouse chicks were caught, wing-banded and released.

### III. Squirrel Management Program

The two main objectives in the squirrel program have been the improvement of census methods for squirrels and the study of territory and migration by the use of marked individuals. The census method most thoroughly investigated is the "time-area count" or "spot census." The movements of the animals have been studied through the use of marked individuals. Sixty-two gray and twenty-one red squirrels have been tagged and a program of retrapping has yielded some interesting observations.

The second method of marking studied is the dyeing of the fur of the trapped animals. These dyed animals retain their color until shedding. A dyed individual is ordinarily identifiable for six months. Two satisfactory fur dyes — red and black — have been employed in marking squirrels.

### IV. Floristic Mapping

A floristic survey of the sanctuary has been completed during the past year. The plant species, their density and size were recorded from a large number of experimental plots established throughout the area.

### V. Herbarium

Over five hundred species of plants have been collected, dried and identified. Two duplicate collections have been made, one for permanent storage at the sanctuary, the other to be filed in a university herbarium.

### VI. Museum Collection

Study skins of birds and mammals present on the sanctuary are being collected and stored in museum cases as an aid to identification. There are now 112 items in the museum collection, 100 of the available 153 species of birds and twelve of the forty-six species of mammals.

### VII. Miscellaneous

Forty wood duck nesting boxes were erected on the sanctuary and will be kept under observation. A winter feeding program for waterfowl carried over at the sanctuary about 170 Mallard ducks, thirty black ducks, one wood duck and sixty-eight Canadian geese. A photographic dark room has been built at the headquarters.

## PRIVATE SHOOTING PRESERVES UNDER STATE REGULATION

A summary of the records on Private Shooting Preserves for the 1940-1941 and 1941-1942 seasons is as follows:

	1940-1941 Season	1941-1942 Season
Number of Preserves in Operation .....	20	23
Number Operating During Regular Season ..	6	5
Number Operating During Extended Season	14	18
Total Acreage .....	11,163½	13,111
Total Reported Pheasant Liberation .....	11,357	10,920
Total Reported Pheasant Kill .....	4,938	5,371
Percentage of Kill of Number Liberated ....	43.5%	49.2%

## SUMMARY OF REPORTS SUBMITTED BY CONN. GAME BREEDERS

	1940	1941
Breeders Licensed .....	597	599
Breeders Reporting Pheasants .....	305	293
Breeders Reporting Pheasant Sales .....	178	156
Total number of Pheasants Purchased during year	4,821	7,606
Total number of Pheasants Raised during year...	57,405	58,933

## DISPOSITION OF STOCK

1. For Liberation within the State:		
(a) Sold to the Department .....	12,506	25,033
(b) Sold to Fish & Game Clubs .....	5,842	4,820
(c) Sold to Individuals or Liberated by Breeders	1,977	1,460
(d) Sold to Private Shooting Preserves .....	6,441	6,632
	<hr/>	<hr/>
	26,766	37,945
2. Sold to Persons outside the State .....	12,573	9,326
3. Sold as Food .....	4,199	3,678
4. Sold as Breeding Stock (to other breeders) ...	397	674
5. Used as Food by the Breeders .....	474	708
6. Sold to other Breeders (for resale) .....	3,067	1,983
7. Miscellaneous .....	139	126
	<hr/>	<hr/>
	20,849	16,495

## FIELD TRIAL PERMITS ISSUED IN 1940 AND 1941

	1940	1941
Bird Dog Trials .....	46	49
Coon Dog Trials .....	18	18
Fox Dog Trials .....	3	4
Combination Coon and Fox Dog Trials .....	17	14
Beagle Trials .....	..	6
	<hr/>	<hr/>
Totals .....	84	91

**Members of Division of Game Restoration:**

Arroll L. Lamson, Game Management Supervisor

James S. Bishop, Assistant Game Management Supervisor

Philip Barske, Game Management Technician

\*Leslie A. Williamson, Game Management Technician

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\* In armed forces.

## Fish Restoration

### Trout Restoration

Connecticut's policy of stocking adult legal trout in its lakes and streams is the principal feature of its trout restoration program. Absence of heavy spring floods in 1941 and 1942 produced stream conditions much more favorable for the stocking of trout than in previous seasons. Supplementing the trout raised in our hatcheries in the year 1941-1942, 47,978 pounds of legal brown, rainbow and eastern brook trout were purchased from commercial hatcheries. An additional 220 pounds of lake trout were purchased. This policy is being continued in future contracts for 30,150 pounds of legal fish which have been placed for spring delivery in 1943. Trout distribution tables will be found on pages 75-87, incl.

### Plant Improvements and New Equipment

Three rearing pools 100' x 40' have been constructed at Burlington during 1941. The major portion of this work was done by the Civilian Conservation Corps. An air-cooled refrigerating unit has been installed in the meat room; also heater for providing hot water for washing meat grinders, tools, etc. Three fish distribution trucks and tanks have been replaced.

In the Farmington area one new pool 75' x 30' was completed in 1941. The water supply proved inadequate during the drought period.

At the Kensington station six new wells were drilled. Flow records are being kept on these wells to determine their effect on the water supply.

Windsor Locks station plant improvements consisted of a cement foundation for feed room.

In the Pachaug Forest Area no further development has been made.

At the Federal Hatchery at Hartsville, Massachusetts, ten thousand brook trout fingerlings are being held for the Department under a cooperative agreement in which the food for the winter period is furnished by this Department. This cooperative agreement was instituted in 1940 with gratifying results and the service is greatly appreciated.

### Survey of Waters

The services of Professor Richard Foster Flint, Geologist of Yale University, were retained for a reconnaissance survey of water resources with a view to the future establishment of fish rearing stations.

Observations on selected sites will be continued in order to check the permanency of the water supply.

### **Bass Fry**

In cooperation with the United States Fish and Wildlife Service, smallmouth bass fry to the number of 270,000 in 1941 and 265,000 in 1942 were secured and released in smallmouth bass ponds in the state. Also, in 1941 two thousand bass fingerlings and in 1942 twelve hundred bass fingerlings were secured from the Federal Hatchery at Arcadia, Rhode Island.

### **Pond Fish**

The rearing, purchase and salvage of pond fish have been continued during 1941-1942, Connecticut River commercial fishermen continuing to supply a portion of the fish stocked in ponds.

Bog Meadow Reservoir in Norwich, scheduled for drawing down this fall, will not be drawn off due to loss of personnel in the Department.

Cooperating with the Western Connecticut Fish and Game Protective Association and the Waterbury Fish and Game Club, several reservoirs in the two areas were netted for pond fish to be distributed in ponds open to angling. The Department furnished nets, equipment and transportation and the members of the two clubs tended the nets and assisted in the distribution of fish caught. The assistance rendered by the clubs is acknowledged with appreciation. Pond fish tables will be found on pages 88-92 incl.

### **Fish Restoration Maintenance**

As the program of state ownership and control of impounded waters is extended, there arises attendant problems of dam maintenance and repairs which must be met if these waters are to remain satisfactory fish producing units. The very nature of such a program of utilization of waters for recreational use almost precludes the possibility that modern concrete dams will be secured since ordinary lakes and ponds can not be purchased under such a program until they are past their usefulness as sources of power or as sources of water for human use. During this biennium several of these construction jobs were completed.

**Wood Creek Pond, Norfolk.** This State-owned pond is impounded by an earthen dam backed by dry masonry. The spillway section had deteriorated so that a satisfactory water level was no longer maintained. The entire spillway section was replaced with a log crib structure so as to secure the maximum possible water level.

**Peat Works Pond, Meriden and Berlin.** The masonry lining of the box-type spillway was repaired. The lower end of the conduit through the dam which had been destroyed by the 1938 Hurricane was replaced with reinforced concrete and necessary fill was replaced.

**Crystal Lake, Ellington.** This lake has recently been stocked with large rainbow trout which show a marked tendency to migrate downstream in the spring. In order to prevent this loss of fish a concrete foundation designed to hold removable wooden screens was placed at the gateway.

### Pond Survey

The work of the Lake and Pond Survey Unit has been explained in the twenty-second and twenty-third biennial reports. A detailed report of the data gathered in 1937, 1938 and 1939 with recommendations for the improvement of fishing has been published and is being distributed through the State Librarian. This report entitled, "A Fishery Survey of Important Connecticut Lakes," (Bulletin No. 63 of the Connecticut Geological and Natural History Survey) may be secured by addressing a request to the State Librarian, Hartford. Known factors influencing fish production are discussed and methods recommended to secure maximum sustained yield from fishing waters are presented. A system of harvesting is proposed which may make the possible maximum yield express itself in terms agreeable to anglers.

Sections on limnology and fish parasites are included. One section is devoted to a discussion of the life histories and habits of all of the species of fish reported to inhabit Connecticut lakes and ponds.

A map supplement of sixty-three of the more important lakes covered by the survey has been prepared and is being distributed through the State Librarian. These maps are based on tracings of the Fairchild Aerial Survey at the scale of 1" = 600' and "bottom features" are shown by contour lines. This Supplement entitled, "Maps Showing Bottom Contours of Important Connecticut Lakes," (Supplement to Bulletin No. 63 of the Connecticut Geological and Natural History Survey) may be secured in entirety or separate maps of individual lakes may be secured from the State Librarian. Maps of the following waters are available:

Alexander Lake, Killingley  
Ball Pond, New Fairfield  
Bantam Lake, Litchfield and Morris  
Basham Lake, East Haddam  
Batterson Park Pond, Farmington

Beardsley Park Pond, Bridgeport  
Beseck Lake, Middlefield  
Black Rock Pond, Watertown  
Buena Vista & Wood Ponds,  
West Hartford

Burr Reservoir, Torrington	Pataganset Lake, East Lyme
Candlewood Lake, Sherman, New Milford, New Fairfield, Danbury and Brookfield	Peat Works Pond, Meriden and Berlin
Cedar Swamp Pond, Wolcott and Bristol	Pickerel Lake, Colchester and East Haddam
Columbia Lake, Columbia	Powers Lake, East Lyme
Cream Hill Pond, Cornwall	Quassapaug Lake, Woodbury and Middlebury
Crystal Lake, Ellington and Stafford	Rogers Lake, Lyme and Old Lyme
Crystal Pond, Eastford and Wood- stock	Roseland Lake, Woodstock
Gardner Lake, Salem, Montville and Bozrah	Samp Mortar Reservoir, Fairfield
Green Falls Reservoir, Voluntown	Shenipsit Lake, Ellington, Tolland and Vernon
Hall's Pond, Eastford	North Spectacle Lake, } Kent } one map
Hatch Pond, Kent	South Spectacle Lake, } Kent }
Hayward Lake, East Haddam	Stillwater Pond, Torrington
Highland Lake, Winchester	Taunton Pond, Newtown
Housatonic Lake, Derby and Shelton	Terramuggus Lake, Marlborough
Indian Pond, Sharon	Toby Pond, Norfolk
Lake Pocotopaug, East Hampton	Trumbull Reservoir, Trumbull
Long Pond, Ledyard and North Stonington	Twin Lakes, Salisbury
Long Meadow Pond, Middlebury	Tyler Pond, Goshen
Long Meadow Pond, Bethlehem	Waumgumbaug Lake, Coventry
Manitook Lake, Granby	Waramaug Lake, Warren, Wash- ington and Kent
Mashapaug Lake, Union	West Hill Pond, New Hartford
Moodus Reservoir, East Haddam	Winchester Lake, Winchester
Moriarty's Pond, Wilton	Winnemaug Lake, Watertown
Mt. Tom Pond, Litchfield, Wash- ington and Morris	Wononscopomuc Lake, Salisbury
Mudge Pond, Sharon	Wononpakook Lake, Salisbury
North Farms Reservoir, Wallingford	Wood Creek Pond, Norfolk
Old Marsh Pond, Bristol and Plymouth	Zoar Lake, Oxford, Southbury, Monroe and Newtown

During the summers of 1940 and 1941 the Survey worked in the Litchfield and Hartford districts which include the townships of Bethlehem, Bridgewater, Canaan, Cornwall, Goshen, Harwinton, Kent, Litchfield, Middlebury, Morris, Naugatuck, New Milford, Norfolk, North Canaan, Oxford, Plymouth, Prospect, Roxbury, Salisbury, Sharon, Southbury, Thomaston, Torrington, Warren, Washington, Waterbury, Watertown, Winchester and Woodbury in the Litchfield district and Avon, Barkham-

sted, Berlin, Bloomfield, Bristol, Burlington, Canton, Colebrook, East Granby, Farmington, Granby, Hartford, Hartland, New Britain, New Hartford, Newington, Plainville, Rocky Hill, Simsbury, Southington, Suffield, Wolcott, West Hartford, Wethersfield, Windsor and Windsor Locks in the Hartford district.

An attempt was made to visit all of the ponds and lakes in these areas. The larger waters received detailed study as a guide to future fishery management practices; the smaller ponds were visited and their estimated dimensions and salient characteristics were catalogued. The location and locally accepted names of these small ponds were placed on a revised map based on the United States Geological Survey sheets.

A report is in preparation which will cover the work of the Survey in 1940 and 1941 and will include copies of the maps mentioned above.

The Survey inventoried over 650 small ponds in the Litchfield and Hartford districts having a total estimated area of 5,189 acres. These figures do not include the larger and better known fishing waters nor the municipal water supplies. It is obvious that these ponds are a potentially valuable fish-producing asset to the owners and to local sportsmen. However, it is the considered opinion of the Survey that the majority of these waters are at the present time producing far less in food and recreation than they should. The reasons for the present poor production in these small ponds appear to be improper stocking in the past together with wrong harvesting. The report which will be published on the 1940 and 1941 work will attempt to explain the management methods which are most likely to succeed in small ponds. However, it appears that some sort of extension service will have to be provided if these small ponds are to be properly stocked, cropped, and fertilized for maximum fish yield.

The work of the Survey was suspended in 1942 for the duration of the war because of lack of properly trained personnel and scarcity of transportation facilities.

### **Blackledge River Creel Census**

A field of investigation, which has been somewhat neglected in view of its financial importance, is the trout restoration program. Although a large percentage of the total departmental budget was expended on trout during this biennium there are no reliable modern data on the results or returns to the anglers which might be expected from this expenditure. No one knew, for example, what percentage of the legal-sized trout liberated were caught; how well hatchery trout survived natural stream conditions; how many trout migrated up or downstream from a given area of stream; what percentage of the total catch was composed of hold-over

or native trout; how far anglers were willing to travel for their sport; what effect the present concentration of anglers, fishing under the present laws, have on the trout population; how brooks, browns, and rainbows compare in catchability, resistance to adverse environmental conditions, and hold-over qualities; or whether the distribution methods now used were necessary or efficient in spreading angling throughout the length of a stream.

Since the answers to these unknowns are basic knowledge for efficient administration of the trout program, a start was made to determine the facts during the 1941 fishing season. For the purpose the Blackledge River creel census was inaugurated. This fishery field study was substituted for the Lake and Pond Survey which was suspended for the duration of the war for reasons mentioned previously.

### Organization of the Study

A State-owned section of the Blackledge River approximately two miles long below the New London Turnpike was blocked off at each end by weirs. Each weir was so constructed that should trout attempt to pass they would be trapped and the direction (upstream or downstream) of their movements would be known. All trout trapped in going through the weirs were tagged and released to continue their migration.

Three separate plants were made — one pre-season and two during the season. Each plant was composed of equal numbers of brook, brown, and rainbow trout and all stocked trout were eight inches or more in length. The trout in each plant were marked differently so that it was possible to identify the trout caught as being from the first, second, or third plant, or as trout which were left in the stream from the previous season.

All anglers were checked in and out of the test area and their catch examined when they were through fishing. A constant patrol of the test area was maintained throughout the season.

### Summary of Results

A preliminary tabulation of the data has been made and it is now possible to summarize the facts established and to mention measures which they indicate should be taken to increase the amount of recreational trout fishing per dollar expended in Connecticut streams. A complete report of the investigation will be published at a later date.

1. A total of 4,475 trout were stocked in the test area.
2. Fishermen to the number of 3,152 spent 9,746 hours and caught 2,706 trout, and 323 dead trout were accounted for.

3. The average distance traveled to the river (one way) by fishermen was approximately twenty miles.
4. The hold-over and native trout were insignificant in point of numbers (approximately one per cent) and most of the hold-overs were brown trout. However, the important point seems to be that trout *can* hold-over or be produced in the stream. Young of the year, yearlings, and older brown trout were in the river before any stocking was done in 1941. The principal reason why there were not more hold-over trout, so far as could be determined from this year's study, was that there were few left by anglers at the end of the 1940 season.
5. There was no sizable migration either into or out of the area while the weirs were in place (April 15 to September 15).

The following table shows migration:

	Moving Upstream Into Area	Moving Downstream Out of Area	Moving Upstream Out of Area	Moving Downstream Into Area
Brooks	11	2	6	1
Browns	3	8	13	0
Rainbows	12	19	4	0

Many of the trout which passed the weirs were subsequently caught nearby, showing there was no urge to migrate long distances. The greatest distance any of the trout were known to travel was less than two miles above and below the test area.

This indicates that in general the trout must be placed where they are to be caught. However, regardless of where the trout are stocked there seems to be a definite tendency to shift into the deeper pools during the early part of the season. It is possible that this tendency is more pronounced in newly stocked trout.

6. The freshly stocked trout were not as resistant to high temperature as were wild trout of the same species or hatchery trout which had been in the stream for a period of even two weeks.

Sudden rises in temperature were associated with mortality, and in each case the trout which died were predominantly of the group just previously stocked. Just as there was a noticeable difference in susceptibility depending upon the length of time the trout had had for acclimatization to stream conditions, so was there a difference between species which had been stocked at the same time. The mortality in any one plant (composed of equal numbers of brooks, browns, and rainbows) was heaviest in brook trout, intermediate in brown trout and lightest in rainbow trout.

These data serve to confirm what is known of the relative resistance of the three species to high temperatures.

7. There was differential catchability between the three species. The brook trout were most easily taken and were quickly removed from the stream, the rainbows were intermediate, and the brown trout provided the most sustained fishing. However, these differences are purely relative because all freshly stocked trout were easily caught if weather conditions were favorable and even the few remaining brook trout became wary after they had been in the stream for a time.
8. Trout were removed at a rate incompatible with sustained recreational fishing. Connecticut is a small state with a relatively large number of anglers. This has led to keen competition between anglers for the available supply of trout and unusual interest in the stocking activities of the department. Modern communication and transportation enabled an influx of anglers to follow each truckload of trout and, in several instances, they actually beat the truck to the stream and sat down to await its arrival.

Due to the heavy fishing following each plant, to the ease of catching freshly stocked trout, and to the fact that each angler could take fifteen trout per day, the stream was soon fished out.

The average rate of depletion on any one plant was as follows:

- 48% caught within one day after being planted
- 60% caught within two days after being planted
- 66% caught within three days after being planted
- 71% caught within four days after being planted

This rate of depletion is figured on the basis of the total number of fish caught from a plant rather than on the total number planted.

It is apparent that sustained fishing could not be maintained with reasonable expenditure of funds under these conditions. The solution would appear to be a decrease in the daily limit and smaller, more frequent plants.

9. Few people fish after the end of the regular trout season on July 15. It has been the policy of the Department to extend the trout fishing season on the larger State-owned or leased streams. Previously, there were no figures on the number of fishermen served by this measure or how successful they were. On the Blackledge River in 1942 only fifty fishermen, or one and a half per cent of the total fishing was done after July 15. These men caught fourteen trout. It appears that extension of the season was not important either from the number of fishermen who took advantage of the privilege or from the number of trout taken. How-

ever, this late season fishing did take trout which had become acclimatized and were thus potentially valuable as seed stock.

10. The facts summarized above are not presented as being representative of State-wide conditions. There seems to be three main reasons why these data may not be representative. They are: (1) An increase of fishermen in the Hartford area due to defense work; (2) Publicity attendant on the test stream work which led fishermen to believe the stream would be heavily stocked; and (3) Stream improvement in the river which may have held trout better than some unimproved streams having less favorable cover conditions. However, it is believed that the general conditions revealed in this work occur in many other heavily stocked, State-controlled streams with minor differences in degree.

### Shad

The 1942 shad season compared favorably with the previous 1941 season. Returns to fishermen for shad shipped to market showed little improvement.

Shad did not enter the Salmon River in any quantity although reports have been received that a few were observed below the Highway Bridge on Route 151. Though none were observed at Leesville Dam, shad furnished a great deal of sport for the angler on light tackle. The most popular spots for this sport are on the Connecticut River at the Enfield Dam and the Eight Mile River at Hamburg.

### Smelt

Commercially, this species is not of great importance to Connecticut although it has been fished for commercially in some sections of the state. During the fall it furnished some sport for the angler, entering our coves and brackish rivers in October and November. In April they migrate up our fresh water streams for the purpose of reproduction. Although not taken by angling at this period, this is the time they are taken with more or less success by commercial seiners. For the past several years the fall smelt run has not appeared along our coast. This year they have returned and are reported in considerable numbers.

### Winter Flounder

No attempt has been made to propagate this commercial species since the original hatchery was destroyed in 1938. The principal reason for this condition remains as previously reported. Fishermen have tied up their vessels and entered some other field of endeavor. This condition is more prevalent under the present emergency. Therefore, it is reasonable

to expect the above condition will remain during the duration of this emergency.

### Lobster Rearing

During the biennium the Department has continued the rearing and planting of fourth, or diving stage, lobsters. Approximately one-half million of the small crustaceans have been produced and liberated along the Connecticut coast during this period. Supplementing the rearing of fourth stage lobsters is the purchase of green egg-bearing lobsters which are purchased from commercial fishermen and punch-marked for identification before being returned to the water again. It has been the experience of the Department that green egg-bearers confined in retaining cars lost fifty per cent of their eggs and approximately twenty-five per cent of the confined lobsters died. Therefore, it seems preferable to purchase, punch and release these lobsters in the waters where taken.

### Commercial Fisheries

The years of 1940 and 1941 were very good years to the average commercial fisherman. The prices were very good and the market was steady. The year of 1941 was better in that respect than 1940. A decrease in certain species of fish is shown in 1941 due to the war industry employing the fishermen. During the year 1940 there were forty-eight different species of fish and crustaceans reported caught by commercial fishermen of Connecticut. This may vary from year to year, as in 1941 there were fifty-one different species reported. The inshore fleet of small boats has dropped off each year while the larger vessels are increasing in number as well as in their catch. The following reports are all exclusive of any shellfish or boats used in that industry.

### BOATS AND GEAR USED IN COMMERCIAL FISHING IN CONNECTICUT

1940

	No.	Crew	Value of Boats	Value of Gear
Registered vessels	39	105	\$201,500	\$ 20,605
Motor boats	203	317	146,975	110,341
Rowboats	156	219	7,005	11,757
Total	398	641	\$355,480	\$142,703

1941

Registered vessels	42	112	\$232,500	\$ 31,605
Motor boats	193	287	135,975	106,200
Rowboats	146	197	6,855	10,700
Total	381	596	\$375,330	\$148,505

**Transfer of State Boat and Services of Marine Warden**

At the request of the State Police Commissioner, the 35-ft. hunting cabin fishing boat owned by the Fish Division was provided with a cabin enclosure and placed at the disposal of the Police Department for harbor patrol February 1, 1942.

Marine Warden Walter Palmer was detailed as operator of the boat on a half-time basis. This Department is reimbursed by the State Police Department for his services.

The following tables give a comparison of the catch of the ten most important species caught by Connecticut fishermen:

**Butterfish**

<i>Month</i>	<i>1940</i>		<i>Month</i>	<i>1941</i>	
	<i>Pounds</i>	<i>Value</i>		<i>Pounds</i>	<i>Value</i>
January			January	400	\$ 22.00
February			February		
March			March		
April			April		
May	230	\$ 13.97	May	60	5.32
June	7,179	272.95	June	5,686	277.98
July	6,142	326.77	July	10,464	639.99
August	11,413	501.56	August	8,148	457.70
September	31,276	1,424.21	September	3,718	162.41
October	21,651	1,311.29	October	8,229	329.28
November	10,817	763.77	November	947	74.11
December	42,210	2,424.10	December	2,640	158.40
*Full year	620	32.50	Full year	599	56.75
Total	131,538	\$7,071.12	Total	40,891	\$2,183.94

**Eels (Common)**

January	375	\$ 48.60	January	120	\$ 36.00
February	140	22.20	February	15	4.50
March	23	6.90	March		
April	223	22.65	April	277	22.78
May	1,861	195.64	May	883	110.60
June	2,075	219.34	June	1,221	146.24
July	1,416	134.95	July	560	60.00
August	1,146	121.80	August	685	74.13
September	1,440	157.36	September	724	84.92
October	1,271	150.53	October	127	14.91
November	171	20.52	November	255	67.76
December	14	2.28	December	100	30.00
*Full year	22,052	2,067.30	Full year	12,234	1,566.78
Total	32,207	\$3,170.07	Total	17,201	\$2,218.62

## Flounders (Blackbacks)

Month	1940		Month	1941	
	Pounds	Value		Pounds	Value
January	36,650	\$2,615.30	January	131,602	\$7,896.12
February	19,450	1,310.25	February	59,243	5,022.70
March	43,100	2,904.00	March	64,061	4,167.27
April	288,390	16,733.40	April	284,198	11,237.70
May	626,822	24,890.73	May	349,442	14,010.52
June	829,396	28,265.94	June	994,459	54,445.62
July	593,753	29,577.17	July	454,710	20,530.93
August	226,229	11,566.06	August	117,991	4,194.83
September	305,876	12,392.32	September	206,775	7,127.90
October	392,507	15,866.93	October	290,085	12,627.04
November	289,034	14,186.43	November	382,245	18,456.25
December	240,707	12,223.21	December	137,655	6,598.75
*Full year	76,061	3,331.49	Full year	116,805	7,092.00
Total	3,967,975	\$175,863.23	Total	3,589,271	\$173,407.63

## Fluke

January			January		
February			February		
March			March		
April			April	100	\$ 9.00
May	8,765	\$ 869.00	May	71,394	6,786.14
June	15,363	1,445.85	June	41,362	4,339.82
July	21,226	2,797.41	July	26,175	2,891.52
August	49,061	5,210.90	August	61,554	6,172.80
September	67,780	7,120.17	September	66,675	6,994.08
October	10,193	1,222.78	October	17,023	1,866.06
November	1,884	288.71	November	997	109.32
December	1,482	188.66	December	250	27.50
*Full year	168	17.40	Full year	660	67.00
Total	175,922	\$19,160.88	Total	286,190	\$29,263.24

## Lobsters

January	476	\$ 108.05	January	1,392	\$ 329.16
February	183	50.99	February	506	122.56
March	102	29.84	March	138	40.28
April	4,050	965.55	April	9,219	2,398.01
May	34,091	7,405.87	May	37,851	9,328.85
June	57,281	12,456.06	June	51,037	13,081.15
July	115,925	26,460.67	July	129,670	32,490.33
August	102,145	24,704.28	August	101,527	25,908.06
September	47,611	12,187.47	September	51,195	13,168.41
October	22,393	6,231.71	October	26,293	6,858.38
November	17,265	4,311.51	November	22,999	5,968.23
December	6,577	1,714.64	December	14,306	3,728.14
*Full year	58,302	15,093.70	Full year	43,197	10,866.65
Total	466,401	\$111,720.34	Total	489,330	\$124,288.21

## Porgy (Scup)

<i>Month</i>	<i>1940</i> <i>Pounds</i>	<i>Value</i>	<i>Month</i>	<i>1941</i> <i>Pounds</i>	<i>Value</i>
January			January		
February			February		
March			March		
April			April	100	\$ 3.50
May	4,000	\$ 120.00	May	2	.06
June	2,000	60.00	June	277,681	8,330.83
July	120,441	3,267.44	July	195,709	5,876.27
August	129,150	3,880.50	August	298,495	10,451.21
September	150,920	6,792.00	September	213,968	8,560.22
October	103,871	6,232.26	October	26,665	1,199.93
November	1,943	116.58	November	100	7.00
December			December		
*Full year	1,137	77.45	Full year	777	51.35
Total	513,462	\$20,546.23	Total	1,013,497	\$34,480.37

## Shad

January			January		
February			February		
March			March		
April	3,005	\$ 300.71	April		
May	36,051	2,647.86	May	249	\$ 64.35
June	9,950	684.24	June	208	12.40
July			July		
August			August		
September			September		
October			October		
November			November		
December			December		
*Full year	318,462	13,739.22	Full year	420,491	19,315.08
Total	367,468	\$17,372.03	Total	420,948	\$19,391.83

## Striped Bass

January			January		
February			February		
March			March		
April			April		
May	1,414	\$ 218.35	May	860	\$ 203.70
June	1,607	241.05	June	1,300	356.61
July	688	130.88	July	611	165.35
August	684	134.80	August	323	98.05
September	80	10.00	September	61	17.60
October	1,418	337.00	October	308	62.40
November	1,160	205.75	November	589	147.25
December			December		
*Full year	882	120.24	Full year	60	7.20
Total	7,933	\$1,398.07	Total	4,112	\$1,058.16

## Whiting

1940			1941		
Month	Pounds	Value	Month	Pounds	Value
January	1,800	\$ 57.25	January	3,480	\$ 139.20
February	200	8.00	February	900	30.50
March			March		
April			April		
May	3,600	72.00	May	785	15.70
June	2,525	54.00	June	337	16.85
July	31,625	640.00	July	1,530	30.80
August	25,725	514.50	August	4,000	120.00
September	45,600	1,145.00	September	15,275	390.88
October	48,445	1,401.35	October	15,350	389.10
November	11,875	252.75	November	5,165	154.95
December	11,255	406.95	December	719	24.09
*Full year	500	16.00	Full year	720	63.60
Total	183,150	\$4,567.80	Total	48,261	\$1,375.67

## Yellowtails

January	549,625	\$18,257.13	January	842,840	\$21,099.51
February	688,250	27,047.00	February	1,092,860	38,346.98
March	1,062,750	30,860.50	March	916,808	29,892.80
April	1,092,081	32,572.43	April	955,392	23,659.80
May	184,875	4,618.88	May	497,369	9,947.38
June	173,850	4,346.25	June	48,604	1,215.00
July	131,297	3,604.65	July	329,284	11,524.94
August	273,010	8,190.30	August	938,451	27,253.53
September	230,225	5,755.63	September	766,702	23,001.06
October	399,900	9,897.49	October	862,591	34,463.64
November	347,075	8,917.44	November	538,145	16,144.35
December	436,145	10,903.65	December	561,755	24,067.22
*Full year	500	15.00	Full year		
Total	5,569,583	\$164,986.35	Total	8,350,801	\$260,616.21

## 1940

Total pounds and value of the above ten species . . .	11,415,638 lbs.	\$525,856.12
Total pounds and value of others . . . . .	525,349 lbs.	29,588.49
Grand Total . . . . .	11,940,988 lbs.	\$555,444.61

## 1941

Total pounds and value of the above ten species . . .	14,260,502 lbs.	\$648,283.88
Total pounds and value of others . . . . .	515,195 lbs.	24,209.74
Grand Total . . . . .	14,775,697 lbs.	\$672,493.62

\* Represents annual report of catch of a few fishermen.

The lobster industry shows an increase of catch and value for the year 1941 over the year 1940. The catches on the eastern half of Long Island Sound were less per boat while the west end produced a little better than the previous year. The number of regular fishermen has been less due to the increase in defense work in our State, a large number having gone to work in shipyards and factories. Some of these men did fish for a month or two and others have given up altogether.

## LOBSTER STATISTICS FOR CONNECTICUT — 1940

	Number Lobstermen Reporting	No. Traps Reported	Average No. Per Lobsterman	Total Catch Pounds	Average Catch Per Trap In Pounds
January .....	5	320	65	476	1.49
February .....	4	120	30	183	1.50
March .....	4	120	30	102	.85
April .....	31	2,635	85	4,051	1.53
May .....	89	10,591	119	34,091	3.21
June .....	105	12,705	121	57,281	4.51
July .....	124	17,360	140	115,924	6.68
August .....	123	15,744	128	102,145	6.48
September .....	104	12,896	124	47,611	3.70
October .....	74	6,956	94	22,394	3.23
November .....	54	4,590	85	17,264	3.74
December .....	29	2,059	71	6,577	3.19
Full Year Reports .....	67	2,881	43	58,302	20.23
Total number of individual lobstermen reporting .....				199	
Total number of lobsters caught .....				466,401	
Average monthly catch per trap in pounds .....					
Average catch for one trap set for 12 months .....					40.11

## LOBSTER STATISTICS FOR CONNECTICUT — 1941

	Number Lobstermen Reporting	No. Traps Reported	Average No. Per Lobsterman	Total Catch Pounds	Average Catch Per Trap In Pounds
January .....	8	320	40	1,392	4.03
February .....	7	185	25	506	2.73
March .....	4	112	25	138	1.23
April .....	37	2,742	74	9,219	3.36
May .....	84	9,764	116	37,851	3.87
June .....	107	12,742	119	51,037	4.00
July .....	121	17,100	141	129,670	7.59
August .....	105	12,560	119	101,527	8.08
September .....	98	10,279	105	51,195	4.98
October .....	65	5,984	90	26,293	4.39
November .....	47	3,924	83	22,999	5.86
December .....	35	2,306	66	14,306	6.20
Full Year Reports .....	63	2,442	38	43,197	13.55
Total number of individual lobstermen reporting .....				192	
Total number of pounds of lobsters caught .....				489,330	
Average monthly catch per trap in pounds .....					4.69
Average catch for one trap set for 12 months .....					56.32

The total value of the Commercial Fisheries Industry at the start of 1941 of boats, gear and produce was estimated at \$2,024,450, which figure does not include any boats or gear used in the shell-fish industry. If these were included the value would be more than doubled.

## MARINE FISHERIES COMPACT

The Atlantic States Marine Fisheries Compact was described in the Biennial Report for 1938-1940. This Compact has since been ratified by the states of Maine, New Hampshire, Massachusetts, Rhode Island, New

York, New Jersey, Delaware, Maryland, Virginia, and South Carolina. Only four of the coastal states eligible for membership in the commission have not yet acted, Connecticut, Georgia, North Carolina, and Florida.

Ratification of the Marine Fisheries Compact on the part of Connecticut would mean representation for the State in the Atlantic States Marine Fisheries Commission. According to the provisions of the bill, three representatives to the commission would be appointed by the Governor. One to be the executive head of the Conservation Department, one a representative of the fisheries industry, and the third a member of the Legislature.

The expenses of the commission to be borne by the State of Connecticut for the Biennium of 1943-1945 has already been determined at \$1000 on the basis of Connecticut's percentage in the total primary market value of the products of marine fisheries for 1940 as reported by the United States Fish & Wildlife Service. The Marine Fisheries Compact was considered by the Legislature in 1941 and the recommendation was made by the Committee on Fish & Game that action be deferred until other coastal states had indicated their intentions with regard to the compact.

The Compact is again placed on the list of legislative proposals by the State Board of Fisheries and Game with the recommendation that it be adopted by the Assembly.

#### Members of Division of Fish Restoration

Frank N. Banning, Superintendent of Fish Culture

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Lyle M. Thorpe, Aquatic Biologist

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Lloyde R. Congdon, Caretaker

\* In armed forces.

## Distribution of Trout

1940-1941

## Brook Trout Fingerlings

## HARTFORD COUNTY

Name and Location of Water	1940	1941
Austin Brook, Suffield .....		500
Big Brook, Avon .....		1,000
Bunnell Brook, No. Br., Burlington .....	1,000	
Cannons Brook, Suffield .....		2,000
Chidsey Brook, Avon .....		2,000
Creamery Brook, East Granby .....		500
Cuishman Brook, Granby .....		2,000
Devines Brook, Suffield .....		500
Farmington River, E. Br., Hartland .....		3,827
Hatchery Brook, Berlin .....		146
Iron Ore Brook, Windsor .....		1,000
Jim's Brook, Canton .....		1,000
Marshall Phelps Farm Brook, Windsor .....		1,000
Merrigan Brook, Windsor Locks .....		500
Mill Brook, Windsor .....		1,000
Minister Brook, Simsbury .....		1,500
Morgan Brook, Granby .....		1,000
Muddy Brook, East Granby .....		2,000
Nod Brook, Avon .....		1,000
Pumping Station Brook, Berlin .....		1,500
Roaring Brook, Canton .....		1,500
Spencer Brook, Suffield .....		500
State Line Brook, Suffield .....		1,500
Thompson Brook, Avon .....		1,500
Whittemore Brook, Suffield .....		1,000
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	1,000	29,973

## NEW HAVEN COUNTY

Chestnut Hill Reservoir, Waterbury .....	2,125
Harbor Brook, Meriden .....	1,500
Harbor Brook, E. Br., Meriden .....	4,500
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	8,125

## NEW LONDON COUNTY

Great Meadow Brook, Voluntown .....	3,850
Mt. Misery Brook, Voluntown .....	400
Myron Kinnie Brook, Voluntown .....	2,600
Palmer Brook, Griswold .....	1,200
Savitsky Brook, Colchester .....	500
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	8,550

## WINDHAM COUNTY

Name and Location of Water	1940	1941
Beaver Dam Brook, Eastford .....		5,000
Bebington Brook, Ashford .....		4,000
Butts Brook, Woodstock .....		3,000
Carson Brook, Sterling .....		5,500
Crooked Brook, Sterling .....		4,000
Darling Pond Brook, Chaplin .....		2,000
Davis Brook, Plainfield .....		3,000
Deane Brook, Canterbury .....		4,000
Dixon Brook, Sterling .....		3,000
English Neighborhood Brook, Woodstock .....		3,000
Gallup Brook, Plainfield .....		3,000
Gardner Brook, Ashford .....		2,000
Lipps Brook, Ashford .....		3,000
Masons Brook, Brooklyn .....		4,000
Monty Brook, Scotland .....		4,000
Moritz Brook, Ashford .....		2,000
Moss Brook, Woodstock .....		4,000
Obwebetuck Brook, Windham .....		4,000
Potash Brook, Windham .....		3,000
Sandy Brook, Brooklyn .....		4,000
Squaw Hollow Brook, Ashford .....		3,000
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		72,500

## LITCHFIELD COUNTY

Aspetuck River, W. Br., Kent .....	6,000
Bee Brook, Washington .....	4,500
Butternut Brook, Litchfield .....	6,000
Camp Brook, Roxbury .....	2,000
Cider Mill Brook, Bridgewater .....	4,000
Clapboard Oak Brook, Bridgewater .....	2,000
Furnace Brook, Cornwall .....	6,000
Hill Brook, Litchfield .....	1,000
Jack's Brook, Roxbury .....	2,000
Lenevig Brook, Roxbury .....	5,000
Little Jack's Brook, Roxbury .....	2,000
Macedonia Brook, Kent .....	1,500
Mallory Brook, Washington .....	1,000
Marshepaug River, Goshen .....	4,000
Mohawk Brook, Goshen .....	4,000
Naugatuck River, E. Br., Winchester .....	6,000
Naugatuck River, W. Br., Torrington .....	4,000
Pierce Brook, Roxbury .....	2,000
Potter Brook, Cornwall .....	4,000
Roxbury Brook, Roxbury .....	2,000
Shears Brook, Morris .....	1,500
Shepaug River, E. Br., Goshen .....	6,000
Spalding Brook, Norfolk .....	2,500
Toby Pond Brook, Norfolk .....	2,000
Town Farm Brook, New Milford .....	4,000
Turrill Brook, Roxbury .....	2,000
Viningram Brook, Washington .....	4,000
Wangum Lake Brook, Canaan .....	2,500
West Norfolk Brook, Norfolk .....	3,000
Wickwire Brook, Canaan .....	2,500
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	99,000

MIDDLESEX COUNTY

Name and Location of Water	1940	1941
Baroni's Brook, Haddam .....		500
Beaver Brook, Haddam .....		1,100
Bible Rock Brook, Middletown .....		1,000
Camp Stuart Brook, East Hampton .....		500
Halfway Brook, Haddam .....		500
Hammer Shop Brook, Cromwell .....		3,000
Krieger's Brook, Haddam .....		500
Pole Bridge Brook, Haddam .....		1,000
Ponset Brook, Haddam .....		1,000
Saltpeter Brook, Haddam .....		500
Turkey Hill Brook, Haddam .....		500
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		10,100

TOLLAND COUNTY

Abbey Brook, Ellington .....		2,000
Alden Brook, Stafford .....		2,000
Avery Brook, Somers .....		2,000
Bahler's Brook, Ellington .....		2,000
Charter's Brook, Tolland .....		2,000
Clark's Brook, Vernon .....		2,000
Codfish Falls Brook, Mansfield .....		2,000
Conant Brook, Mansfield .....		2,000
Grapevine Brook, Tolland .....		2,000
Kalis Brook, Tolland .....		2,000
Kimball's Brook, Ellington .....		2,000
McIntyres Brook, Stafford .....		2,000
Muddy Brook, Ellington .....	2,175	5,000
Ogden Brook, Vernon .....		2,000
Pease's Brook, Somers .....		2,000
Peck's Brook, Ellington .....	1,000	
Polk Hill Brook, Tolland .....		2,000
Salmon River, Hebron .....		500
Saw Mill Brook, Mansfield .....		2,000
Schanade Brook, Somers .....		2,000
Tancanhoosen River, Vernon .....	1,400	
Town Brook, Vernon .....		3,000
Thrasher Brook, Somers .....	1,000	
Weaver Brook, Mansfield .....		3,000
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	5,575	45,500
Total No. Brook Trout Fingerling .....	6,575	273,748

Brook Trout Adults

One Year

HARTFORD COUNTY

Buckhorn Brook, Enfield .....	500	600
Bunnell Brook, No. Br., Burlington .....	400	400
Cannons Brooks, Suffield and Granby .....	275	275
Cherry Brook, Canton .....	300	600
Cold Brook, Glastonbury .....	175	200
Copper Mine Brook, Bristol .....	291	400
Dark Hollow Brook, Glastonbury .....	150	200

## Hartford County—(Continued)

Name and Location of Water	1940	1941
Farm Brook, South Windsor .....		200
Freshwater Brook, Enfield .....	600	700
Hatchery Brook, Berlin .....	200	
Iron Ore Brook, Bloomfield and Windsor .....	100	100
Johnsons Brook, South Windsor .....	100	100
Kettle Brook, Windsor Locks .....	175	
Mill Brook, Windsor and Bloomfield .....	225	325
Podunk River, South Windsor .....	525	600
Pumping Station Brook, Berlin .....		200
Quinnipiac River, Southington .....		1,000
Roaring Brook, Glastonbury .....	700	900
Salmon Brook, Glastonbury .....	150	300
State Line Brook, Suffield .....	250	250
Stony Brook, Suffield .....	250	250
Stratton Brook, Simsbury .....	450	650
Whaples Brook, South Windsor .....	75	75
	5,891	8,325

## NEW HAVEN COUNTY

Bladens River, Woodbridge, Bethany and Seymour .....	400	300
Cotton Hollow Brook, Bethany and Naugatuck .....	500	300
Eight Mile Brook, Southbury and Oxford .....	2,350	800
Harbor Brook, Meriden .....		100
Harbor Brook, E. Br., Meriden .....		200
Hop Brook, Middlebury, Waterbury and Naugatuck .....	300	450
Hopp Brook, Bethany .....	100	200
Little River, Oxford .....	1,250	400
Long Meadow Brook, Middlebury and Naugatuck .....	200	200
Neck River, Madison .....	240	250
Prospect St. Brook, Naugatuck .....	100	100
Shattuck Brook, Middlebury .....	150	150
Wepawaug River, Woodbridge .....	200	
	5,790	3,450

## NEW LONDON COUNTY

Anguilla Brook, Stonington .....	500	600
Copp's Brook, Stonington .....	350	450
Denison Brook, Voluntown .....	800	500
Exeter Brook, Lebanon .....	460	200
Gardner Brook, Bozrah .....	100	200
Great Meadow Brook, Voluntown .....	1,550	700
Harris Brook, Salem .....		100
Hunts Brook, Waterford .....	200	200
Indiantown Brook, Preston .....	150	100
Jordan Brook, Waterford .....	400	300
Latimer Brook, East Lyme and Montville .....	1,000	900
McCarthy's Brook, Franklin .....	275	300
McGuire Brook, Groton .....	225	275
Meadow Brook, Colchester .....	500	600
Mountain Brook, Franklin .....	150	200
Oxoboxo Brook, Montville .....	75	75
Pachaug River, Voluntown .....	300	450
Palmer Brook, Griswold .....	100	100
Pease Brook, Lebanon .....	200	200

## New London County—(Continued)

Name and Location of Water	1940	1941
Pendleton Hill Brook, North Stonington .....	900	600
Shunock Brook, North Stonington .....	500	600
Stony Brook, Montville .....	550	400
Susquetonscut Brook, Lebanon and Franklin .....	1,200	600
Ten Mile River, Columbia and Lebanon .....	600	600
Trading Cove Brook, Montville and Bozrah .....	1,600	
Whitfords Brook, Stonington and Groton .....	350	600
Wyassup Brook, North Stonington .....	150	150
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	13,185	10,000

## FAIRFIELD COUNTY

Ball Pond Brook, New Fairfield .....	1,400	800
Boys Halfway River, Monroe .....	300	
East Swamp Brook, Danbury and Bethel .....	300	250
Lime Kiln Brook, Bethel .....	1,000	700
Mill River, Fairfield .....	600	700
Pond Brook, Newtown .....	590	600
Pootatuck River, Newtown .....	1,000	650
Rippowam River, Stamford .....	600	800
Titicus River, Ridgefield .....	1,300	700
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	7,090	5,200

## WINDHAM COUNTY

Bungee Brook, Woodstock and Eastford .....	650	700
Carson Brook, Sterling .....	50	50
Ekonk Brook, Plainfield and Sterling .....	100	100
Five Mile River, Putnam and Killingly .....	100	300
Herridean Brook, Woodstock .....	100	100
Horse Brook, Plainfield .....	100	100
Kitt Brook, Canterbury .....	600	600
Knowlton Brook, Ashford .....	100	100
Mary Brown Brook, Putnam .....		100
Mashamoquet Brook, Pomfret .....	600	900
Mashentuck Brook, Killingly .....	150	200
Merrick Brook, Scotland .....	100	100
Mill Brook, Plainfield .....	150	250
Muddy Brook, Woodstock .....	550	650
Nightingale Brook, Pomfret and Woodstock .....	150	150
Quaduck Brook, Sterling .....	1,000	1,300
Quaker Meetinghouse Brook, Pomfret .....	50	50
Still River, Eastford .....	200	550
Stone House Brook, Chaplin .....	150	200
Taylor Brook, Woodstock .....	200	250
Whetstone Brook, Killingly .....	50	100
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	5,150	6,850

## LITCHFIELD COUNTY

Bantam River, W. Br., Goshen .....	100	
Beaver Brook, Barkhamsted .....	600	600
Branch Brook, Thomaston and Watertown .....	500	400
Cider Mill Brook, Bridgewater .....	300	
Hancock Brook, Plymouth and Waterbury .....	1,100	600

## Litchfield County—(Continued)

Name and Location of Water	1940	1941
Hollenbeck River, Canaan .....		200
Lake Waramaug Brook, Warren .....	450	400
Mad River, Winchester .....	300	250
Marshapaug River, Goshen and Litchfield .....	200	200
Mill Brook, Sharon .....	250	250
Mill Brook, Winchester .....	100	150
Morgan Brook, New Hartford .....	550	550
Morrissey Brook, New Milford .....	300	200
Naugatuck River, E. Br., Torrington and Winchester.....	250	250
Naugatuck River, W. Br., Torrington .....	250	250
Nepaug River, New Hartford .....	700	1,300
Northfield Brook, Thomaston and Litchfield .....	175	175
Riga Brook, Salisbury .....	250	400
Shepaug River, E. Br., Goshen .....	800	300
Spruce Swamp Brook, Salisbury .....	200	200
Wangum Lake Brook, Canaan .....	250	300
	7,625	6,975

## MIDDLESEX COUNTY

Allyns Brook, Durham .....	150	150
Asmun's Brook, Durham .....	75	
Balls Brook, Durham .....	175	175
Beaver Brook, Haddam .....	600	600
Bible Rock Brook, Middletown and Haddam .....	275	550
Boones Brook, Westbrook .....	100	100
Buck Brook, Portland .....	100	150
Candlewood Hill Brook, Haddam .....	375	375
Carr Brook, Portland .....	150	
Cox Brook, Portland .....	325	350
Deep River, Saybrook .....	325	325
Fowler Brook, Durham .....	125	125
Great Brook, Chester .....	200	200
Hales Brook, Portland .....	150	300
Hammer Shop Brook, Cromwell .....	100	250
Hersig Brook, Durham .....	100	100
Mine Brook, East Hampton .....	100	100
Muddy Brook, East Haddam .....	150	150
Muddy Gutter Brook, East Hampton .....	150	
Parmalee Brook, Durham .....	300	300
Patchogue River, Westbrook .....	175	175
Pine Brook, East Hampton and Haddam .....	250	350
Pole Bridge Brook, Haddam .....	496	
Ponset Brook, Haddam .....	400	400
Reservoir Brook, Portland .....	350	500
Saw Mill Brook, Durham .....	125	125
Sumner Brook, Middletown .....	75	75
Trout Brook, Westbrook .....	300	300
Wadsworth Brook, Durham .....	100	100
	6,296	6,325

## TOLLAND COUNTY

Alden Brook, Stafford .....	500	600
Crystal Lake Brook, Stafford .....	1,200	1,400
Eagleville Brook, Mansfield .....	100	50
Gillettes Brook, Somers .....		200

Tolland County—(Continued)

Name and Location of Water	1940	1941
Ginger Brook, Stafford .....	75	100
Gulf Stream, Somers .....	600	1,020
Hop River, Bolton, Andover and Coventry .....	1,050	1,200
Macht Brook, Columbia .....	400	350
Peck's Brook, Ellington .....	500	600
Raymond Brook, Hebron .....	550	325
Skungamaug River, Coventry, Tolland and Andover .....	1,850	2,037
Tancanhoosen River, Vernon .....	1,100	1,438
Thrasher Brook, Somers .....	100	100
Tucker Brook, Vernon .....	100	100
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	8,125	9,520
No. of One Year Brook Trout Adults Planted in Streams Other Than State-controlled .....	59,152	56,645

**Brook Trout Adults**

Two Year

FAIRFIELD COUNTY

Rippowam River, Stamford .....	60
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**Brown Trout Fry**

TOLLAND COUNTY

Blackman's Brook, Andover .....	5,000
Burnap Brook, Andover .....	5,000
Hop River, Bolton .....	5,000
Macht Brook, Columbia .....	5,000
Saddle Brook, Andover .....	5,000
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Total No. Brown Trout Fry .....	25,000

**Brown Trout Fingerling**

NEW LONDON COUNTY

Albert Hoxie Brook, Lebanon .....	3,000	
Four Mile River, East Lyme .....	3,000	5,000
Meadow Brook, Colchester .....	2,500	5,000
Pecks Brook, Colchester .....		2,000
Pendleton Hill Brook, North Stonington .....	3,000	
Wolf Brook, Colchester .....	2,000	
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	13,500	12,000

WINDHAM COUNTY

Angell Brook, Plainfield .....	1,500
Attawaugan Brook, Killingly .....	1,000
Bennett Brook, Canterbury .....	1,000

## Windham County—(Continued)

Name and Location of Water	1940	1941
Cady Brook, Putnam .....		2,000
Coffey Brook, Canterbury .....		1,500
Cold Spring Brook, Brooklyn .....		1,500
Creamery Brook, Brooklyn .....		1,500
Darby Brook, Canterbury .....		1,000
Kelly Brook, Killingly .....		1,000
Labelle Brook, Killingly .....		1,000
Mary Brown Brook, Putnam .....		1,447
Mason's Brook, Brooklyn .....		1,500
Packerville Brook, Canterbury .....		1,000
Spencer Pond Brook, Windham .....		1,500
Sugar Brook, Plainfield .....		1,000
Tatnic Brook, Canterbury .....		1,500
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		20,947

## LITCHFIELD COUNTY

Bantam River, Litchfield .....		5,000
Carsh Brook, Sharon .....	2,000	4,000
East Aspetuck River, Trib., Washington .....	2,000	
Furnace Brook, Cornwall .....	3,000	5,000
Guna Brook, Sharon .....		5,000
Potter Brook, Cornwall .....		5,000
Riga Brook, Salisbury .....	3,000	5,000
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	10,000	29,000

## MIDDLESEX COUNTY

Camp Stuart Brook, East Hampton .....	2,000	2,000
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## TOLLAND COUNTY

Scantic River, Somers .....		851
Watchaug Brook, Somers .....		500
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		1,351
Total No. Brown Trout Fingerling .....	25,500	65,298

## Brown Trout Adults

## One Year

## HARTFORD COUNTY

State Line Brook, Suffield .....	1,200	2,000
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## TOLLAND COUNTY

Avery Brook, Somers .....	1,474	1,500
No. of One Year Brown Trout Adults Planted in Streams Other Than State-controlled .....	2,674	3,500

**Brown Trout Adults**

## Two Year

## HARTFORD COUNTY

Name and Location of Water	1940	1941
Roaring Brook, Glastonbury .....	300	450
Scantic River, East Windsor .....	100	350
Stony Brook, Suffield .....	100	107
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	500	907

## NEW HAVEN COUNTY

Hammonasset River, Madison .....		100
Quinnipiac River, Meriden and Cheshire .....		200
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		300

## NEW LONDON COUNTY

Four Mile River, East Lyme .....	150	150
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## FAIRFIELD COUNTY

Rippowam River, Stamford .....	100	500
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## WINDHAM COUNTY

Quinebaug River, Brooklyn, Plainfield and Canterbury .....	1,000	1,100
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## LITCHFIELD COUNTY

Housatonic River, Bridgewater and Southbury .....	700	
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## MIDDLESEX COUNTY

Reservoir Brook, Portland .....		25
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## TOLLAND COUNTY

Hockanum River, Ellington .....	200	300
Hop River, Bolton, Andover and Coventry .....	250	350
Middle River, Stafford .....	300	350
Skungamaug River, Coventry .....		250
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No. of Two Year Brown Trout Adults Planted in Streams	750	1,250
Other Than State-controlled .....	3,200	4,232

**Rainbow Trout Fingerling**

## NEW LONDON COUNTY

Joshuatown Pond, Upper, Lyme .....		10,000
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## FAIRFIELD COUNTY

Name and Location of Water	1940	1941
Ball Pond Brook, New Fairfield .....	9,000	7,000
Greenwoods Brook, Sherman .....	3,000	
Greenwoods Brook, So. Br., Sherman .....	3,000	1,500
	<hr/> 15,000	<hr/> 8,500

## WINDHAM COUNTY

Alexander Lake, Killingly .....		4,000
Beaver Dam Brook, Eastford .....	2,000	5,748
Bigelow Brook, Eastford .....		3,015
Crystal Pond, Eastford .....		10,641
Darling Pond Brook, Chaplin .....	1,000	
Mary Brown Brook, Putnam .....	1,000	
Reed Brook, Chaplin .....	1,000	
Still River, Woodstock .....	2,000	
Stonehouse Brook, Chaplin .....	2,875	
Sugar Brook, Plainfield .....	5,000	5,116
	<hr/> 14,875	<hr/> 28,520
Total No. Rainbow Trout Fingerling .....	29,875	47,020

## Lake Trout Adults

## One Year

## LITCHFIELD COUNTY

Twin Lakes, Salisbury .....	1,700
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## Distribution in State-Controlled Waters

## Brook Trout Adults

## One and Two Year

Name and Location of Water	1940 One Year	1940 Two Year	1941 One Year	1941 Two Year
East Aspetuck River, Washington and New Milford .....	2,800		2,500	
Bantam River Outlet, Litchfield and Morris....	2,010		2,000	
Beaver Brook, Franklin and Sprague .....	2,200		1,700	
Bigelow Brook, Eastford .....	2,000		3,000	
Blackberry River, Norfolk and North Canaan...	1,900		1,500	500
Blackledge River, Marlboro and Colchester ....	1,860		2,780	
Blackwell Brook, Brooklyn .....	800		500	
Branford River, Branford and North Branford..	1,150	40	1,975	
Broad Brook, Ellington .....	1,100		1,200	200
Broad Brook, Preston .....			1,000	
Chatfield Hollow Brook, Killingworth .....	1,500		2,240	
Coginchaug River, Durham .....	950		550	
Dickinson Creek, Colchester .....	300		375	
Eight Mile River, East Haddam .....	1,500		1,250	

**Brook Trout Adults—(Continued)**

## One and Two Year

Name and Location of Water	1940 One Year	1940 Two Year	1941 One Year	1941 Two Year
Farm River, North Branford and East Haven..	1,180		2,000	
Farmington River, New Hartford, Canton and Collinsville .....	400	150	600	110
Farmington River, W. Br., Barkhamsted, Hart- land, Colebrook and New Hartford .....	5,774	446	4,190	4,782
Fenton River, Mansfield .....	3,600	115	2,900	
Housatonic River, Cornwall and Sharon .....	4,300	1,000	4,935	8,061
Jeremy's River, Colchester .....	1,000		500	
Kent Falls Brook, Kent .....	1,000		1,375	
Little River, Scotland and Canterbury .....	900		895	
Macedonia Brook, Kent .....	2,000		2,500	
Mill River, Hamden and North Haven .....	1,192		2,500	
Mount Hope River, Ashford and Mansfield ....	1,200	60	2,000	
Mt. Misery Brook, Voluntown .....	1,916		1,950	
Muddy River, Wallingford .....	1,493		1,145	
Myron Kinnie Brook, Voluntown .....	2,100		1,500	
Natchaug River, Eastford and Chaplin .....	3,600	400	9,865	1,040
Norwalk River, Norwalk and Wilton .....	1,000		2,245	
Pequonnock River, Bridgeport, Trumbull and Monroe .....	2,550	50	3,000	
Philips Pond, Voluntown .....	200			
Pomperaug River, Woodbury and Southbury ...	3,092	250	4,000	
Quinnipiac River, Southington .....	525			
Roaring Brook, Willington and Stafford .....	3,050	200	3,670	750
Salmon Brook, E. Br., Granby .....	1,850		2,400	
Salmon Brook, W. Br., Granby .....	200		500	
Salmon River, East Hampton and Colchester ...	3,150	856	2,574	1,428
Sandy Brook, Colebrook .....	1,800	100	3,000	
Scantic River, Somers .....	2,200	250	2,520	481
Shepaug River, Roxbury and Southbury .....	1,600		1,810	
Snake Meadow Brook, Plainfield and Killingly ..	1,600		1,700	
Trading Cove Brook, Norwich and Bozrah .....			1,100	
Weekeepeemee River, Woodbury .....	400		500	
West Hill Pond, New Hartford .....	2,831			
Whiting River, North Canaan .....	100		100	
No. of Brook Trout Adults Planted in State- controlled Waters .....	77,873	3,917	90,544	17,352

**Brown Trout Adults**

## Two Year

Name and Location of Water	1940	1941
East Aspetuck River, Washington and New Milford.....		500
Blackledge River, Marlboro and Colchester .....	750	1,051
Blackwell Brook, Brooklyn and Canterbury .....	900	1,000
Coginchaug River, Durham .....	301	405
Eight Mile River, East Haddam .....	400	400
Farm River, North Branford and East Haven .....	900	900
Farmington River, Farmington, Avon, Simsbury, East Gran- by, Canton, New Hartford and Barkhamsted .....	1,500	1,900
Farmington River, W. Br., Barkhamsted and New Hartford.		500
Housatonic River, Sharon, Cornwall and Bridgewater .....	2,300	4,553
Jeremy's River, Colchester .....	200	67
Little River, Canterbury .....		100
Mill River, Hamden and New Haven .....	400	800

**Brown Trout Adults—(Continued)**

## Two Year

Name and Location of Water	1940	1941
Muddy River, Wallingford, North Haven and North Branford .....	500	600
Norwalk River, Wilton and Norwalk .....	800	1,000
Pequonnock River, Bridgeport and Trumbull .....	500	800
Pomperaug River, Woodbury and Southbury .....	600	1,000
Quinnipiac River, Meriden and Cheshire .....	200	
Salmon Brook, E. Br., Granby .....	282	550
Salmon River, East Hampton and Colchester .....	1,944	2,000
Scantic River, Somers .....	1,140	1,000
Shepaug River, Roxbury and Southbury .....	400	800
Willimantic River, Willington, Mansfield and Coventry....	1,400	1,500
Yantic River, Bozrah and Lebanon .....	1,500	700
No. of Brown Trout Adults Planted in State-controlled Waters .....	16,917	22,126

**Rainbow Trout Adults**

Name and Location of Water	1940 One Year	1940 Two Year	1941 Two Year
Blackledge River, Marlboro and Colchester ....		300	
Cream Hill Pond, Cornwall .....		1,300	945
Crystal Pond, Eastford and Woodstock .....	6,396		
Farmington River, New Hartford, Canton, Farmington, Avon, Simsbury, East Granby and Barkhamsted .....		810	900
Farmington River, W. Br., New Hartford and Barkhamsted .....		200	293
Housatonic River, Sharon and Cornwall .....		1,400	351
Moriarty's Pond, Wilton .....		1,350	1,000
Natchaug River, Eastford and Chaplin .....		925	1,950
Pomperaug River, Woodbury and Southbury ...		700	
Lake Quassapaug, Middlebury .....		2,878	2,822
Salmon River, East Hampton and Colchester ...		1,028	1,261
Schreeder Pond, Killingworth .....		150	350
Trumbull Reservoir, Trumbull .....		800	800
West Hill Pond, New Hartford .....		2,773	2,745
Lake Wononscopomuc, Salisbury .....	2,790	3,685	3,376
Yantic River, Lebanon and Bozrah .....		500	1,000
No. of Rainbow Trout Adults Planted in State-controlled Waters .....	9,186	18,799	17,793

**Lake Trout Adults**

## One Year

## LITCHFIELD COUNTY

Name and Location of Water	1940	1941
Lake Wononscopomuc, Salisbury .....		2,500
TOTAL NO. OF TROUT PLANTED .....	*253,668	627,518

\* In addition to this figure, 7,500 lake trout fingerlings were received from the State of Vermont and planted in Twin Lakes, town of Salisbury.

## SUMMARY STATEMENT OF TROUT PLANTED

	1940	1941
<b>Fry</b>		
Brown Trout .....		25,000
<b>Fingerling</b>		
Brook Trout .....	6,575	273,748
Brown Trout .....	25,500	65,298
Rainbow Trout .....	29,875	47,020
	<b>*61,950</b>	<b>386,066</b>
<b>Adults Planted in State-controlled Waters</b>		
Brook Trout—1 yr. ....	77,873	90,544
Brook Trout—2 yr. ....	3,917	17,352
Brown Trout—2 yr. ....	16,917	22,126
Rainbow Trout—1 yr. ....	9,186	
Rainbow Trout—2 yr. ....	18,799	17,793
Lake Trout—1 yr. ....		2,500
	<b>126,692</b>	<b>150,315</b>
<b>Adults Planted in Other Waters</b>		
Brook Trout—1 yr. ....	59,152	56,645
Brook Trout—2 yr. ....		60
Brown Trout—1 yr. ....	2,674	3,500
Brown Trout—2 yr. ....	3,200	4,232
Lake Trout—1 yr. ....		1,700
	<b>65,026</b>	<b>66,137</b>
<b>Total Adults Planted</b>		
Brook Trout—1 yr. ....	137,025	147,189
Brook Trout—2 yr. ....	3,917	17,412
Brown Trout—1 yr. ....	2,674	3,500
Brown Trout—2 yr. ....	20,117	26,358
Rainbow Trout—1 yr. ....	9,186	
Rainbow Trout—2 yr. ....	18,799	17,793
Lake Trout—1 yr. ....		4,200
	<b>191,718</b>	<b>216,452</b>
<b>TOTALS OF ALL TROUT PLANTED .....</b>	<b>*253,668</b>	<b>627,518</b>

\* In addition to this figure, 7,500 lake trout fingerlings were received from the State of Vermont and planted in Twin Lakes, town of Salisbury.

## Distribution of Fishes to Lakes and Ponds

Season of 1940

Name of Water Stocked	Pickerel	Yellow Perch	Black Bass	Calico Bass	Bull- heads	Shiners	Roach
Alexander Lake .....					2,700	37,100	
Killingly							
Alvia Reservoir .....					1,100		
Killingly							
American Institute for Deaf Pond .....		83		118	131		
West Hartford							
Amos Lake .....		3,000			27,800		
Preston							
Basham Lake .....		7,000				20,000	
East Haddam							
Beach Pond .....		5,000			51,500		2,500
Voluntown							
Beaver Pond .....	15	668	36 L. M.	61	159	18	142
Meriden							
Big Pond .....	22	1,249	2 L. M.		126		
Windham							
Bigelow Pond .....	58			12	300		
Hampton							
Billings Lake .....		2,000			30,000	3,000	
North Stonington							
Black Pond .....	6	1,322	1 S. M.		269		
Woodstock							
Bog Meadow Pond...					400		
Killingly							
Bolton Notch Pond..		3,000			19,800		2,000
Bolton							
Brewsters Pond .....		630			86		
Stratford							
Clayville Pond .....		3,000			15,000	2,000	
Griswold							
Columbia Reservoir ..						8,100	
Columbia							
Crystal Lake .....					500		
Ellington							
Eddie Prey Reservoir.					200		
Killingly							
Fitchville Pond .....		3,000			12,000	2,000	3,000
Bozrah							
Freshwater Pond ....		785			1,000		
Enfield							
Glasgo Pond .....		3,000			12,000	2,000	3,000
Griswold							

**DISTRIBUTION OF FISHES TO LAKES AND PONDS**  
(Continued)

Season of 1940

Name of Water Stocked	Pickerel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Grants Pond .....		3,000			12,000	2,000	3,000
Franklin							
Great Hill Pond .....		3,000			25,000	2,000	
Portland							
Hall's Pond .....					200		
Eastford							
Heferan Pond .....	25	115		20	1,918		
Harwinton							
Hopeville Pond .....		3,000			25,000	2,000	
Griswold							
Lake of Isles .....					27,000		2,000
North Stonington							
Lily Pond .....		663			957		
Thompson							
Lindley's Pond .....	61	419					
Woodbridge							
Little Pond .....					100		
Thompson							
Long Pond .....					18,000	5,000	
Ledyard							
Moosup Pond .....	4	1,436	1 S. M.		301		
Plainfield							
Muddy Pond .....					100		
Woodstock							
Oxoboxo Lake .....		3,000			15,000	2,000	
Montville							
Paper Mill Pond ....		6,000		3,000	31,500	6,000	2,000
Sprague							
Pataganset Lake .....	48	1,371 } White }	22 S. M.	8	86		
East Lyme							
Peat Works Pond ...		5,417		3,000	35,000	6,000	6,000
Berlin and Meriden							
Lake Pocotopaug ....		13,584	7 L. M.	578		10,486	
East Hampton							
Prentise Pond .....		1,233			945		
Putnam							
Quandick Reservoir ..					800		
Thompson							
Rogers Lake .....		2,602	5 L. M.	200		100	
Lyme							
Samp Mortar Reservoir		425	1 S. M.			325	750
Fairfield							
Shaker Pond .....	29			68	995		
Enfield							

**DISTRIBUTION OF FISHES TO LAKES AND PONDS**  
(Continued)

Season of 1940

Name of Water Stocked	Pickerel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Shaw Lake .....		5,000				30,000	
East Haddam							
Stafford Reservoir ...					616		
Stafford							
State Line Pond .....		681			122		
Stafford							
Tankerhoosen Lake ..					25,000	5,000	
Vernon							
Walker's Reservoir ..	46	554	4 S.M.	7	500		
Vernon							
Wappaquasset Pond :					200		
Woodstock							
Waungumbaug Lake.					1,000		
Coventry							
Williams Pond .....		5,376		68	28,379	2,473	4,223
Lebanon							
Willimantic Reservoir					22,500	21,300	
Bolton, Vernon and							
Coventry							
Wyassup Lake .....		2,000			20,000	3,000	2,000
North Stonington							
TOTALS .....	314	91,242	50 L.M.	7,140	468,290	171,902	30,615
	(White) 1,371		29 S.M.				

Grand Total—770,953

**SUMMARY STATEMENT OF POND FISH PLANTED**

Species	Fingerlings	Adults
Pickerel .....		314
Yellow Perch .....	64,085	27,157
White Perch .....		1,371
Largemouth Black Bass .....		50
Smallmouth Black Bass .....		29
Calico Bass .....	5,500	1,640
Bullheads .....	427,447	40,843
Shiners .....		171,902
Roach .....	26,723	3,892
Totals .....	523,755	247,198

Grand Total—770,953

NOTE: In addition to the above, 153 Adult Pickerel were planted in Bog Meadow Reservoir, Norwich—Rearing Pond.

## DISTRIBUTION OF FISHES TO LAKES AND PONDS

## Season of 1941

Name of Water Stocked	Pickerel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Bantam Lake .....			1,000 S. M.				
Litchfield							
Batterson Park Pond. Farmington	41	1,884			19,605	4,860	635
Beardsley Park Pond. Bridgeport	40	667			1,734		
Brewster's Pond .... Stratford	19	594			2,575		
Candlewood Lake .... New Milford and Danbury	180	240 W. 104	7 L. M.		11		
Community Lake .... Wallingford					3,590		
Hamburg Cove .....			9 L. M.				
Lyme							
Heleran Pond .....			50 S. M.				
Harwinton							
Highland Lake .....		7		50	17,000	400	
Winchester							
Holbrook Pond .....	2	1,343			87		
Hebron							
Lily Pond .....		500			3,000		
Thompson							
Paderewski Park Pond Plainville	5	286			862		
Paper Mill Pond .... Seymour		1,202			116		
Peat Works Pond ... Berlin					5,200	9,450	12,260
Powers Lake .....	8	1,914			166		
East Lyme							
Prentiss Pond .....		404			2,507		
Putnam							
Roseland Lake .....	1,000	800			1,050	5,000	
Woodstock							
Shaw Lake .....	10	1,270			44		
East Haddam							
Somersville Pond ... Somers	42	517			1,954		
Stanley Park Pond... New Britain	19	382			1,439		
Stillwater Pond .....			1,000 S. M.				
Torrington							
Williams Pond .....	15	1,456	2 L. M.		65		
Lebanon							
Wood Creek Pond .. Norfolk		1,976			76		
Totals .....	1,381	15,442	2,050 S. M.	5,250	65,331	22,520	635
		(White) 104	18 L. M.				

Grand Total—112,731

## SUMMARY STATEMENT OF POND FISH PLANTED

<u>Species</u>	<u>Fingerlings</u>	<u>Adults</u>
Pickereel .....	200	1,181
Yellow Perch .....		15,442
White Perch .....		104
Largemouth Black Bass .....		18
Smallmouth Black Bass .....	2,000	50
Calico Bass .....	5,200	50
Bullheads .....	47,846	17,485
Shiners .....	17,120	5,400
Roach .....	635	
Totals .....	73,001	39,730

Grand Total—112,731

## DISTRIBUTION OF LOBSTERS — 1942

## 4th Stage Lobsters

<u>Place Where Released</u>	<u>Number</u>
Off Clinton .....	12,000
Off Guilford .....	18,000
Off Groton Long Point .....	10,000
Off Mason's Island, Stonington .....	10,000
Off Morgan's Point, Groton .....	10,000
Off Mouse Island, Groton .....	12,000
Off Mystic Island, Stonington .....	52,000
Off Niantic .....	10,000
Off Noank .....	5,000
Off Quirk Island, Stonington .....	12,000
Off Rowayton .....	30,000
Off Southfield Point, Stamford .....	20,000
Off Westbrook .....	14,000
Total .....	215,000

## Adult Lobsters

Off Clinton .....	400
Off Fishers Island Sound, Stonington and Groton .....	400
Off Noank .....	200
Off Rowayton .....	400
Off Stamford .....	200
Total .....	1,600

## Wildlife Protection and Law Enforcement

This report from the period July 1, 1940 to June 30, 1942 will in some instances overlap and include the calendar year of 1942.

**Arrests and Warnings.** Arrests for 1940-1942 totaled 413 as compared with 643 for 1938-1940, a decrease of 230, or 35.7%.

Warnings for 1940-1942 totaled 1,511 as compared with 1,252 for 1938-1940, an increase of 259, or 20.7%.

The policy of education followed by the members of the warden service among the beginners in the field of hunting, fishing, and trapping would seem to be reflected in the decrease in arrests and the increase in warnings.

The departmental policy of reasonable leniency for the uninformed, unintentional violator is still in force, as is the policy of prosecuting deliberate, wilful violators. Circumstances sometimes make it very difficult to determine whether the violation was intentional or unintentional. In such cases the matter is referred to the proper prosecuting official for decision.

On page 104 there are tables of arrests by districts of fish law violations and game law violations, for each of the fiscal periods in the biennium. These tables also show the number of convictions, percentage of convictions, fines paid and costs paid.

**Connecticut River Patrol.** For some time past it has been felt that there is considerable hunting, fishing, and trapping activity along the Connecticut River and that data on this activity would be advisable. Beginning in June and through to December 1940 the warden service placed seven rowboats in the Connecticut River from Hartford to Saybrook. For the purpose of patrol the river was zoned as follows: Zone 1, Massachusetts line to Hartford Bridge; Zone 2, Hartford Bridge to Middletown Bridge; Zone 3, Middletown Bridge to East Haddam Bridge; Zone 4, East Haddam Bridge to Saybrook Bridge.

From each of the four districts along the river one warden per week was assigned to spend one day patrolling the river by boat and checking all sportsmen found. In this period a total of 938 sportsmen were checked, 372 being hunters and trappers and 566 anglers. The hunters and trappers took 475 pieces of game and the anglers took 927 fishes. The take of

fishes per hour of effort compares favorably with pond fishing. The collected data has been tabulated to show all species of fishes and game taken and the zones in which taken. The summary of fishing success is given on page 102 and the summary of hunting and trapping success is given on page 103.

The above summaries indicate the hunting, fishing, and trapping possibilities of the Connecticut River. The river is capable of supporting much more fishing effort.

**Marine Patrol.** The 1941 session of the Legislature enacted Section 539f of the 1941 Supplement which directs the Department to cause the assignment of at least five wardens to the enforcement of the laws concerning the taking of lobsters and fish in the marine waters between July 1 and September 15 each year. In conformity with this law wardens were assigned to marine patrol during the above-mentioned period in 1941 and 1942. During the period of their assignment these men worked under the direction of the Marine Warden.

A summary of the activities of the men assigned to this patrol follows:

**July 1, 1941 to September 15, 1941**

Complaints received .....	17
Arrests .....	6
Warnings issued .....	21
Inspection of markets, boats, and peddlers .....	187
Miles traveled .....	16,252

**July 1, 1942 to September 15, 1942**

Complaints received .....	3
Arrests .....	...
Warnings issued .....	...
Inspection of markets, boats, and peddlers .....	748
Miles traveled .....	17,577

**Shad Fishing Check on Connecticut River at Suffield.** During the period from May 9 to July 15, 1941, fishing for shad near the Enfield Dam, Town of Suffield, on the Connecticut River, was opened to the public from 9:00 A.M. to 9:00 P.M., under the supervision of two patrolmen. During this period the patrolmen checked 3449 anglers who took a total of 6859 shad in 10,190 hours of fishing effort. In 1942 the season was open from April 20 to July 15, the hours being from 9:00 A.M. to 9:00 P.M. During this time 5172 anglers caught 5395 shad in 15,472 hours of fishing effort. It will be noted that in 1942 this fishing spot attracted 1723 more anglers than in 1941. The take in shad decreased but it is not believed that this was due to lighter migration of this species in the Connecticut River.

The run of shad to this point on the Connecticut River has increased very substantially during the past four years. The popularity of this fishing spot has increased tremendously. It has drawn sportsmen from all points in Connecticut, from Massachusetts and other states. Fishing at this location has been made possible through the courtesy of the Windsor Locks Canal Co., subsidiary of the Connecticut Light & Power Co.

**Turtle Trapping.** In 1939 a cooperative research program for the study of food habits of the snapping turtle to determine its significance as a predatory species was agreed upon by the Department and the University of Connecticut.

The field work, involving trapping and dissecting for the purpose of obtaining stomach specimens, has been carried out by the members of the warden service.

In 1939 a total of 51 separate places including lakes, ponds, streams and marsh areas was trapped. In 1940 this number was increased to 100. In 1941 the trapping activity decreased. The research workers and members of the department selected 33 places for intensive trapping and this program was carried out.

The success of the program required that stomachs containing food be taken. This increased the amount of trapping effort as traps had to be visited more frequently. The dissecting of each turtle also increased the time spent on this activity.

The research work has been done by Mr. Maurice M. Alexander, Graduate Assistant, Department of Forestry and Wildlife Management, University of Connecticut, under the direction of Professor Neil M. Hosley. A thesis on the Ecology and Economic Importance of the Snapping Turtle in Connecticut prepared by Mr. Alexander and covering 150 pages, contains the following remarks in the Summary and Conclusions:

"During the summers of 1939, 1940, and 1941, 735 snapping turtles were obtained in the State of Connecticut and the digestive tracts removed for examination. Of these, 470 were stomachs with food contents. The 13½ quarts of food from these stomachs formed the basis for this study on the food habits of the snapper. In addition to this, information on sex and weight was gathered. During the summer of 1941, experimentation was carried out on the range of the animals, determination of age from weight and length of the carapace, and a few observations were made on egg counts, activities, and feeding.

"The 97 habitats that were trapped in this period of three summers, were classified as lakes, ponds, streams, and swamps,

according to their morphological and biological characters. Each habitat was considered by itself and it was found that the order of their importance was closely correlated with the types of turtle foods available. The economic importance would necessarily take into consideration the relative value of each of the more important food items. The data were analyzed by both volume and frequency, and the percentages of each were averaged to obtain a rating for each food item that would aid in comparing different food items.

"From this study of the economic importance of the snapping turtle in Connecticut, the following conclusions are offered:

1. The economic importance of the snapping turtle depends largely upon the type of habitat in which it lives.
2. There is a definitely high correlation between availability of the various food items and the amount of each taken.
3. It is necessary to have some knowledge of the plants and animals present in any individual habitat in order to determine the importance of the snapping turtle in it.
4. Plant communities seem to be a requirement for the presence of snappers.
5. The snapper becomes of greatest importance in the lakes where plants are scarce and fish and other game animals are plentiful.
6. Ponds and streams are of about equal importance as habitats where snappers can become destructive. Individual examination would be necessary more than in any other types in order to determine the snapper's destructiveness.
7. In swamps the snapper appears to be of least importance, but may become destructive in certain individual cases.
8. Plants play a high part, 37% of the volume taken, in the feeding habits of the snapper.
9. Fish, although they make up 38% of the food by volume, are largely the less valuable ones from the standpoint of sportsmen, *e.g.*, suckers, sunfish, bullheads, and perch. Swift moving fish such as the trout and pickerel, even where they are definitely known to be present, are very seldom taken.
10. Crayfish are the third most important food item based on volume and frequency.
11. The only ducks that were found were wood ducks and mallards. These make up less than one-half of one percent by volume, and are taken only where concentrations are heavy.
12. Muskrats taken were very few and these were usually of the juvenile age class.

13. Although scavenger activities are frequent, it is doubtful that very much dead animal material is taken. This is based on the fact that the fish heads used for bait lost their effectiveness in attracting the snappers after two or three days. Fish were usually left floating on the surface in the feeding experiment cages until removed.
14. The snapper may be beneficial in some habitats by removing over-populated and stunted fish.
15. It is possible to study the daily activities of the snapper although no reliable data were gathered in this study.
16. Contrary to general opinion, the males were found to be of greater weight than the females.
17. The sex ratio was found to be nearly two males to one female, but this may be due to poor sex determination by the collectors.
18. It is quite possible that individuals might reach the age of forty years and a weight of over fifty pounds."

**Assistance to Game Division.** With increased programs in this division of the department, the field work of the wardens in game management activities likewise increased.

**Bird Liberations.** The big increase in pheasant liberations for the biennium was handled by the wardens without difficulty. In 1941 the Department banded both hen and cock birds. In 1942 cock birds only were banded. A careful record was made of all band numbers and places of release. This at first appeared to be a difficult task but, with experience, the technique improved and liberations were made in reasonable time.

When possible, all liberations were witnessed by persons selected by sportsmen's clubs, and when this was not possible, by some other responsible person.

**Pheasant Eggs.** During 1941 the wardens distributed pheasant eggs to cooperative breeders who hatched and raised the birds to the age of fourteen to sixteen weeks. These birds were released on land open to the public.

**Day-old Pheasant Chicks.** In 1942 the Department changed its policy of purchasing pheasant eggs. Instead, day-old chicks were purchased and distributed to cooperative breeders throughout the state who raised the birds to the age of approximately 12 weeks and then released them on land open to the public.

**Food Patches.** During the biennium the wardens assisted in the Department-sponsored cooperative planting of food patches by sportsmen and other groups. The Game Division also made funds available for the planting of several food patches where the entire cost was assumed by the Department. The necessary field work for this program was done by the wardens. They are now making observations to determine the success of the program.

**Game Bird Feed Stations.** The program of building and maintaining game bird feeding stations is still in effect. About five hundred stations were built in 1941 and in 1942. Actual grain distribution usually starts with the first snow and continues through the winter until May first. Most of the stations are visited twice a week.

**Trapping and Redistribution of Game.** The 1941 session of the Legislature, by enacting Section 538f of the 1941 Supplement, which authorizes the Department to take rabbits by the use of ferrets for the purpose of restocking and redistribution, has made it possible to reduce greatly the time formerly spent on the box trap method. The new method produced good results during the winter of 1941-1942. The Department has done a limited amount of trapping of pheasants in non-hunting areas, such as residential sections, for redistribution to areas open to hunting. Some Fish and Game Clubs have spent their own funds to purchase traps for the same purpose. The wardens will assist any group interested in such a program.

**Assistance to Fish Division.** The wardens were called upon to assist the Fish Division in many activities during the biennium. They assisted in the distribution of trout and pond fishes throughout the state. The year of 1941 was exceptionally dry, rainfall being far below normal. Many of the smaller streams dried up completely and most streams were adversely affected. To determine what streams were suitable to receive trout, checks were made of water levels and temperature and this information was turned over to the Fish Division. Stream conditions during the 1942 season were much better than the previous year due to more normal precipitations. However, periodical checks of water levels and stream temperatures were made for the Fish Division.

**Private Waters and Inspection of Sites for Proposed Dams.** Many investigations were made involving inspection of lakes and ponds for registration as private waters, applications for permits to build dams, and requests to treat lakes and ponds with chemicals to control the growth of aquatic plants and algae.

**Pollution.** Several investigations were made concerning pollution and the evidence which was gathered was turned over to the State Water Commission as this Department does not have the power to enforce the pollution laws.

**Land and Water Acquisition.** The field work in connection with the land and water acquisition program is performed by the warden service. It involves the checking of boundaries and land records and contacts with property-owners for the purpose of executing leases and agreements. During the biennium several thousand acres of land have been added to State-leased and regulated shooting areas. Many leases and agreements have also been renewed and executed for fishing rights on streams, lakes, and ponds through warden contacts.

**Warden Activities and Hours Worked.** A tabulation of warden activities and hours worked for the period July 1, 1940 to June 30, 1941 shows the following:

**Percentages of Hours Worked on Law Enforcement, Game Work, Fish Work, and Miscellaneous Activities — During Fiscal Year 1940-1941**

Law Enforcement .....	46,160 hours or 66.5%	
Game Work .....	10,602 hours or 15.3%	
Fish Work .....	7,839 hours or 11.3%	
Miscellaneous .....	4,780 hours or 6.9%	
Total hours worked by 22 wardens .....		69,381

**Comparison of Hours Actually Worked with Hours Required on Basis of 8 hours a Day, five and a half days a week:**

Total hours required on basis of an eight-hour day for 365 days for 22 men .....		64,240
Number of hours allowed for vacations based on 15 days per man—eight-hour day .....	2,640	
Number of hours actual sick leave based on eight-hour day .....	632	
Number of earned hours off based on six days per month for 11 months—eight-hour day .....	11,616	
Number of hours during vacancy of one man—based on eight-hour day for 61 days .....	488	
		<u>15,376</u>
Total hours required after deducting vacation and other leave .....		48,864
Number of hours worked in addition to number of hours required .....		20,517
Total hours required on yearly basis per man .....	2,221	

The above figures show that number of man days worked in excess of required time equals the time of nine and one-quarter men for one full year.

**Percentages of Hours Worked on Law Enforcement, Game Work, Fish Work, and Miscellaneous Activities — During Fiscal Year 1941-1942**

Law Enforcement .....	36,963 hours or 60.2%	
Game Work .....	12,800 hours or 20.8%	
Fish Work .....	6,366 hours or 10.4%	
Miscellaneous .....	5,258 hours or 8.6%	
Total hours worked by 23 wardens .....		61,387

**Comparison of Hours Actually Worked with Hours Required on Basis of 8 hours a Day, five and a half days a week:**

Total hours required on basis of an eight-hour day for 365 days for 23 men .....		67,160
Number of hours allowed for vacations based on 15 days per man—eight-hour day .....	2,760	
Number of hours sick leave based on eight-hour day (33 days) .....	264	
Number of earned hours off based on 6 days per month for 11 months—eight-hour day .....	12,144	
Number of hours during vacancy of three men on military leave based on eight-hour day (225 days) .....	1,800	
		<u>16,968</u>
Total hours required after deducting vacation and other leave .....		50,192
Number of hours worked in addition to number of hours required .....		11,195
Total hours required on yearly basis per man .....	2,182	

The above figures show that number of man days worked in excess of required time equals time of five men for one full year.

**Expenditures.** An objective of warden service management is economy without affecting services rendered. All expenditures are carefully analyzed with the thought that a small staff, well trained and properly equipped, can perform its duties efficiently. The only recognition the wardens expect is the cooperation of the sportsmen to ease unnecessary law enforcement activity and adequate compensation to meet the rising costs of living. For the fiscal period ended June 30, 1941, warden service expenditure amounted to \$60,220.57 or \$2,446.39 less than the expenditure for the previous fiscal year. For the fiscal period ended June 30, 1942 warden service expenditures amounted to \$58,429.51.

**Personnel.** During the biennium two vacancies were filled by appointment of Steve J. Muska of the town of East Windsor, and Roland J. Hotchkiss of Waterbury.

As a result of the United States' entrance into the present world conflict, warden service personnel has been reduced by enlistment and induction of four members whose names appear in the honor roll of this

publication. In line with State policy these vacancies are not being filled. It may be necessary, however, to employ temporary help during the high pressure periods.

In an effort to conserve tires, tubes, and gasoline, it has been necessary to substantially reduce normal patrol activity. Some minor services formerly rendered will be discontinued for the duration of the war. A sincere effort will be made to perform all of our major normal functions. Sportsmen in general and other persons interested in wildlife conservation have been most patient when beset with problems requiring our services. It is hoped that this spirit of patient understanding will continue during the present emergency. The warden service extends sincere appreciation to sportsmen and others for their cooperation in Department activities, especially bird liberations, trapping for redistribution, building and maintenance of feed stations, grain contributions and food patch work. Appreciation is also extended to the many police departments throughout the State for the splendid cooperation received on enforcement matters.

#### Members of Division of Wildlife Protection and Law Enforcement

Thomas E. Rose, Chief Warden  
 Seth J. Monroe, State Warden  
 Raymond E. Piaggi, State Warden  
 Edward T. Bement, State Warden  
 Thomas G. Daniels, State Warden  
 Edward G. Wraight, State Warden  
 George A. Willis, State Warden  
 \*Harding F. Joray, State Warden  
 John E. Wood, State Warden  
 William B. Kibbe, Deputy Warden  
 Charles H. Wells, Deputy Warden  
 \*Alfred J. Hunyadi, Deputy Warden  
 Albert G. Csech, Deputy Warden  
 \*Donald N. Deane, Deputy Warden  
 Eugene H. Johnson, Deputy Warden  
 Lawrence W. Theiss, Deputy Warden  
 James D. Healey, Deputy Warden  
 Frederick E. Lord, Jr., Deputy Warden  
 Douglas D. Moss, Deputy Warden  
 \*Steve J. Muska, Deputy Warden  
 Theodore Andersen, Deputy Warden  
 Alfred M. Williams, Jr., Deputy Warden  
 Louis M. Bayer, Deputy Warden  
 Roland J. Hotchkiss, Deputy Warden  
 Miss Edith A. Stoehr, Deputy Warden  
 Walter R. Palmer, Marine Warden

\*In armed forces.

## FISHING SUCCESS ON CONNECTICUT RIVER — 1940

Zone 1: from Massachusetts State Line to Hartford Bridge.  
 Zone 2: to Middletown Bridge.

Zone 3: to Haddam Bridge.  
 Zone 4: to Saybrook Bridge.

Month	Zone	Sportsmen Checked	Hours Fished	Official Warnings	Arrests	Shad	Bullheads	Eels	Yellow Perch	Carp	Sunfish	Suckers	Striped Bass	Trout	Great Northern Pike	Largemouth Bass	Calico Bass	Chain Pickerel	White Perch	Total Catch
June	1	72	167			40	1	2												43
	2	22	48	3	2	43	7	13	21	7	8									99
	3	65	119	2	4		52	50	30	1		4								137
	4	36	61	2			15	38					3	1 (brown)						57
July		195	395	7	6	83	75	103	51	8	8	4	3	1						336
	1	43	79	2	1	10		12	10	1	7				2					42
	2	97	152	3	1		10	46	19	2	26	2				3	5	2		115
	3	42	89		3		59	13	6		10									88
4	18	23	1	1					4			6								10
Aug.		200	343	6	6	10	69	71	35	7	43	2	6		2	3	5	2		255
	1	11	26					6	4											10
	2	31	97	1				26	1		7						4			38
	3	28	57	2			22	53	4		2									81
4	5	5	2					1												1
Sept.		75	185	5			22	85	10		9						4			130
	1	4	12						2											2
	2	30	67	2			16	11	6	1	33	1				2				70
3	37	69		1		38	20	7		28										93
Oct.		71	148	2	1		54	31	15	1	61	1				2				165
	2	6	9	1			2	3	3	1	2									14
Nov.	2	17	30						18			8								1
	3	2	1																	1
Total		19	31						18			8								1
	1	130	284	2	1	50	1	20	16	1	7				2					97
	2	203	403	10	3	43	35	99	68	11	76	13				5	9	2	2	363
	3	174	335	4	8		171	136	47	1	40	4								399
4	59	89	5	1		15	38	1	4			9	1							68
		566	1111	21	13	93	222	293	132	17	123	17	9	1	2	5	9	2	2	927

HUNTING SUCCESS ALONG THE CONNECTICUT RIVER

Zone 1: from Massachusetts State Line to Hartford Bridge.  
 Zone 2: to Middletown Bridge.

Zone 3: to Haddam Bridge.  
 Zone 4: to Saybrook Bridge.

Month	Zone	Sportsmen Checked	Hours Hunted	Official Warnings	Black Ducks	Mallards	Canvasbacks	Blue-winged Teal	Green-winged Teal	Pin Tail	Pigeon	Old Squaw	Merganser	Wilson Snipe	Sora Rail	Virginia Rail	Miscellaneous	Muskrats	Miscellaneous	Total Catch
Sept.	3	16	22												15					15
	4	53	118												79	3				82
Oct.		69	140												94	3				97
	2	116	417	2	80	2		3	28	10	2									126
	3	1	2						1								1 c. pheas.			1
	4	71	338	1	80	4		2	4	6			1		9		1 ruddy duck			
																	12 broadbill			
																	7 coot			126
Nov.		188	757	3	160	6		5	33	16	2		1		9		21 misc.			253
	2	10	43		4													19		23
	3	7	8															3		3
	4	73	313		49	3	1		1			4	8	2			2 golden eyes	5	1 grey fox	
																	1 whistler			
																	2 broadbill			
																	2 coot			
Dec.		90	364		53	3	1		1			4	8	2			7 misc.	27	2 misc.	108
	2	1	3															2	1 red fox	3
	4	22	108		2	1							4				1 buff-head			
																	1 whistler			9
Jan.		23	111		2	1							4				2 misc.	2	1 misc.	12
	2	2	5															5		5
Total	2	129	468	2	84	2		3	28	10	2						1 misc.	26	1 misc.	157
	3	24	32						1						15			3		19
	4	219	877	1	131	8	1	2	5	6		4	13	2	88	3	29 misc.	5	2 misc.	299
																	30 misc.			475
		372	1377	3	215	10	1	5	34	16	2	4	13	2	103	3		34	3 misc.	475

Note: This report also shows trapping success.

REPORT OF STATE BOARD OF FISHERIES AND GAME

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1940 to June 30, 1941

District	Fish Law Arrests	Game Law Arrests	Total Arrests	Total Convictions	Percentage of Convictions	Fines Paid	Costs Paid	Total Fines and Costs
No. 1 Litchfield .....	12	52	64	56	87%	\$ 684.00	\$ 426.20	\$1,110.20
No. 2 Hartford .....	5	21	26	26	100%	329.00	200.66	529.66
No. 3 New Haven .....	14	19	33	30	91%	240.35	191.63	431.98
No. 4 Fairfield .....	17	23	40	39	97%	202.00	320.49	522.49
No. 5 Tolland .....	3	14	17	14	82%	95.00	101.54	196.54
No. 6 Windham .....	6	35	41	39	95%	267.00	312.74	579.74
No. 7 New London .....	8	6	14	14	100%	320.60	124.30	444.90
No. 8 Middlesex .....	20	10	30	29	97%	196.00	213.62	409.62
TOTAL .....	85	180	265	247	93%	\$2,333.95	\$1,891.18	\$4,225.13

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1941 to June 30, 1942

District	Fish Law Arrests	Game Law Arrests	Total Arrests	Total Convictions	Percentage of Convictions	Fines Paid	Costs Paid	Total Fines and Costs
No. 1 Litchfield .....	9	24	33	33	100%	\$ 463.00	\$ 271.35	\$ 734.35
No. 2 Hartford .....	3	17	20	20	100%	278.00	126.34	404.34
No. 3 New Haven .....	10	9	19	19	100%	102.50	108.01	210.51
No. 4 Fairfield .....	3	10	13	10	77%	58.00	79.22	137.22
No. 5 Tolland .....	5	11	16	14	87%	43.00	96.84	139.84
No. 6 Windham .....	6	18	*24	23	95%	132.00	110.36	242.36
No. 7 New London .....		6	6	6	100%	29.40	46.66	76.06
No. 8 Middlesex .....		11	11	11	100%	76.35	76.21	152.56
Marine .....	6		6	5	82%	147.00	55.60	202.60
Total .....	42	106	*148	141	95%	\$1,329.25	\$970.59	\$2,299.84

\* Includes one pending case.





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**TWENTY-FIFTH BIENNIAL REPORT**  
*OF THE*  
**CONNECTICUT STATE BOARD  
OF FISHERIES AND GAME**

*FOR THE YEARS*  
**1942 - 1944**

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**TWENTY-FIFTH BIENNIAL REPORT**

*OF THE*

**CONNECTICUT STATE BOARD  
OF FISHERIES AND GAME**

*FOR THE YEARS*

**1942 - 1944**

HARTFORD

PUBLISHED BY THE STATE

Printed under authority of Section 142,  
General Statutes of Connecticut, Revision of  
1930, as amended by Section 45e, Supplement  
of 1939.

FRED R. ZELLER,  
*State Comptroller.*

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December 8, 1944

TO HIS EXCELLENCY, RAYMOND E. BALDWIN

Governor of Connecticut

Executive Chambers

Hartford, Connecticut

SIR:

The Commissioners of the State Board of Fisheries and Game respectfully submit herewith the Twenty-fifth Biennial Report of the activities of this department as compiled by the heads of the various divisions, and covering the period from July 1, 1942 to June 30, 1944.

Reduced to simplest terms, the major functions of the State Board of Fisheries and Game are conservation, restoration and perpetuation of desirable wildlife within the State.

Conservation measures are applied to protect our basic stock of fish and game together with its habitat, so that a natural yearly crop may be harvested.

Restoration includes judicious restocking in suitable areas which may have been substantially depleted due to hunting and fishing pressure or to recurrent climatic conditions such as floods, hurricanes or droughts.

Perpetuation, as the name implies, consists of a combination of activities designed to insure the perpetual survival of existing fish and game species and to prevent useful wildlife from becoming totally extinct as did the heath hen and the passenger pigeon. Wise application of fish and game laws is necessary to perpetuate wildlife, and indeed the improvement of stream and cover, control of pollution, management of ponds and lakes and rehabilitation of environment are all essential for the perpetuation and increase of fish in our streams, lakes and tidal waters and game birds and animals in our forests, fields and marshes.

Increase of fish and game will be a necessity in postwar Connecticut. From observations conducted in this and other states, it is freely predicted that hunting and fishing facilities should be expanded in adequate measure to provide for at least a fifty per cent increase in the numbers of hunters and fishermen after the war.

Although wartime restrictions have obviously curtailed the activities of our sportsmen, purchases of hunting and fishing licenses have been maintained to a surprising volume, far greater than would have been anticipated two years ago. Considering the present level of hunting and fishing licenses as a base for planning, it is obvious that thorough preparation should be made to accommodate our returning servicemen. Nearly one-half of them hunted and fished before the war, and according to recent surveys, almost three-quarters of our fighting men hope to find good hunting and fishing as a part of their American way of life when they return victorious from many far-flung battlefronts. The program of this Department for postwar

is well defined, and we earnestly solicit public and legislative support for its consummation.

Land and water are the basic raw materials for fish and game production. In Connecticut we are indeed thankful for the cooperation of a large group of property owners who make their lands and waters available for public hunting and fishing under various arrangements. Nearly all State forests are open to the public for similar recreational use, and in addition, the State Board of Fisheries and Game constantly acquires by gift or purchase areas of land and water which are particularly desirable for wildlife purposes. Purchase acquisitions are greatly expedited by the expert knowledge and skillful guidance of the members of the State Park and Forest Commission who combine with this Board to form the Commission on Forests and Wild Life—now actively engaged in expanding State holdings of land and water suitable for forest, wildlife, recreation and many other uses and benefits to the public too numerous to describe in this report. The Commissioners of the State Board of Fisheries and Game, having first-hand knowledge of the work and accomplishments of the Commission on Forests and Wild Life and its field agents, sincerely recommend continuing State support of its program and policies which are accurately and carefully designed for the benefit of all our people.

The Division of Marine Fisheries operates to the limit of its means to benefit the salt-water fishery resources of our State. Commercial fishing and lobstering provide an important supply of food for market and a livelihood for many people engaged in catching, processing, shipping and marketing marine species. The hatching and rearing of fourth-stage lobsters at the Noank Hatchery for stocking in our coastal waters is regarded by many authorities as highly efficient from the viewpoint of economical production and of prime importance in maintaining and perpetuating a valuable marine industry. In the field of general marine research and survey we heartily commend the Bingham Oceanographic Laboratory of Yale University for many contributions of authentic data concerning our marine resources.

We gratefully acknowledge the assistance and cooperation of all State officials, Boards and Commissions, the Legislature, all Federal agencies concerned with wildlife conservation, the Advisory Council, the Connecticut State League of Sportsmen's Clubs, the Press and many other organizations and individuals.

To our entire Department personnel we offer our commendation for their unflinching diligence and loyalty including those of our staff on leave of absence in the service of our country.

Respectfully submitted,

FRANCIS L. SHEANE, Chairman  
PHILIP C. BARNEY  
JOHN E. FLAHERTY

TO THE COMMISSIONERS,  
State Board of Fisheries and Game,  
State Office Building, Hartford, Conn.

GENTLEMEN:

I have the honor to submit herewith a report on the activities of this Department for the biennial period ending June 30, 1944.

Respectfully,

RUSSELL P. HUNTER, Superintendent

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CONNECTICUT STATE BOARD OF FISHERIES AND GAME

HONOR ROLL—WORLD WAR II

**BARNEY, PHILIP C.	MACKENTHUN, KENNETH M.
BARSKE, PHILIP	McCARROLL, THOMAS J., JR.
BECKLEY, OLIVER E.	MOSS, ROBERT
DANIELS, JOHN C.	MUSKA, STEVE J.
DEANE, DONALD N.	O'BRIEN, ROBERT V.
†ENO, ROY H.	REEVE, JOHN A.
FRANK, WILLIAM A.	**ROGERS, CHARLES L.
HOTCHKISS, ROLAND J.	ROOD, RONALD N.
*HUEY, RALPH L.	SONDRINI, WILLIAM
HUNTER, GEORGE W., III	SPINNER, GEORGE P.
HUNYADI, ALFRED J.	*THAYER, ROBERT T.
JORAY, HARDING F.	THORPE, LYLE M.
KIBBE, WILLIAM BRADFORD	WELLS, CHARLES H.
LAMSON, ARROLL L.	WILDER, NORMAN G.
	WILLIAMSON, LESLIE A.

SONS AND DAUGHTERS OF EMPLOYEES

CONGDON, LESTER R.	MONROE, MELVIN K.
DANIELS, LOUISE A.	ROSE, BARBARA G.
DANIELS, ROBERT S.	WAINMAN, NELSON P., JR.
JOHNSON, CLIFTON C.	WILLIS, GEORGE A.
	WRAIGHT, JOHN E.

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†Missing in action.

\*Killed in action.

\*\*Honorably discharged.

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# BIENNIAL REPORT

1942-1944

## Administration

**Budgets.** The budget presented by the Department for the biennium 1943-45 was approved by the Budget Directors and the Legislature with minor changes, made necessary by the State's policy of making sufficient money available to permit reasonable salary increases and of disallowing or reducing amounts requested for equipment. An appropriation of \$133,313 for the biennium was granted from the General Fund to finance administrative costs, the land and water acquisition program, the marine fisheries program and a part of the law enforcement program.

The Department has managed to maintain its programs and policies through the war period with the cooperation of related State authorities and the individual sportsmen and sportsmen's organizations throughout the State. The standards of stocking for the provision of hunting and fishing have been relaxed only insofar as price increases and availability of stock have made it necessary.

The budget estimates for the biennium 1945-47 provide for a continuation of these programs and the maintenance and expansion of the physical plant of the Department. The Department's program is paralleled by the plans of the U. S. Fish and Wildlife Service in a nation-wide program of wildlife conservation which is concerned with the preservation and restoration of natural resources and the rehabilitation of returning soldiers. Requests have been received from Federal authorities for increased fish and game stocking in areas of hospitalization and plans to meet these requests have been made.

Requests for capital expenditures from the General Fund to maintain and increase the physical plant of the Department have been made because of the prevailing opinion that such expenditures should not be made from license income and in order to permit a continuation of the present program of stocking and the investigational work considered essential for increasing the yield of wildlife in Connecticut's fishing and hunting areas.

A sum of \$25,000 per annum is being requested for the purchase of pheasants to supplement monies available from hunting license revenue. This sum is requested because of the increasing interest in pheasant hunting on the regulated shooting areas developed by the Department and in order to compensate for the increasing cost of the stocking program.

Items of capital expenditures provided for in the budget include (1) repairs to State-owned dams; (2) repairs to roadways on State-owned properties under the jurisdiction of the Department; (3) well

drilling at the Burlington and Kensington Hatcheries to increase the supply of spring water; (4) the construction of a new trout rearing station; (5) the construction of a new two-story garage with storage space at the Burlington Hatchery; (6) the installation of two cold storage boxes at the Windsor Locks and Kensington Hatcheries; (7) construction of eight storage buildings for wardens' equipment; (8) construction of dams at Barber's Pond, Windsor and Bloomfield and at Barn Island, North Stonington; (9) construction of docks and public facilities on various Department-owned areas; (10) rebuilding nine pools at the Windsor Locks Hatchery; (11) painting and repairs to a number of Department-owned buildings; (12) installation of heating plants at the Burlington and Windsor Locks Hatcheries and at the caretaker's residence at the Voluntown rearing station; (13) repairs to stream improvement structures; (14) office equipment and 28 two-way radio sets for the Warden Service.

In submitting our budget estimates, request was made that consideration be given to having the amounts for capital expenditures appropriated for a two-year period.

Provision has also been made in the General Fund budget estimates for the financing of patrol service on leased and regulated hunting and fishing areas. From 1925 to 1933 and again from 1935 to 1939 the Legislature appropriated \$25,000 per annum for the land and water acquisition program to be used for leasing, patrol service and for the stocking of such areas.

**Finances.** Financial statements covering the fiscal years 1942-1943 and 1943-1944 will be found on pages 15-16 of this report.

The working balances on hand in the three funds at the end of the fiscal year 1943-44 after payment of June bills were as follows:

Game Fund .....	\$31,623.60
Inland Fish Fund .....	75,842.70
Marine Fish Fund .....	1,844.00

The revenue from the sale of hunting licenses, officers' fees and miscellaneous sources during the fiscal year 1943-44 was \$17,033.94 less than during the previous fiscal year. The revenue from sale of angling licenses, officers' fees and miscellaneous sources was \$272.59 more than during the previous fiscal year.

It has been impossible to buy items of heavy equipment during the past two years with the result that most of the passenger cars, trucks, boats and general plant equipment are now in need of replacement or major repairs. The cash balances in the funds have permitted the Department to include in its budget estimates for the fish and game funds for the biennium 1945-47, a total of \$54,891 for replacement of equipment.

The income from the sale of hunting and angling licenses and from miscellaneous receipts credited to the Fish and Game Funds for the seven-year period ending 1943-44 was as follows:

	<i>Inland Fish Fund</i>	<i>Game Fund</i>
1937-38	\$115,909.28	\$ 88,012.03
1938-39	105,182.25	81,759.80
1939-40	106,393.81	95,657.16
1940-41	116,645.43	97,228.51
1941-42	135,708.33	119,914.87
1942-43	134,022.15	122,165.20
1943-44	134,294.74	105,131.26

With the exception of the income from the sale of hunting licenses in the year 1943-44, these figures indicate an increasing interest in fishing and hunting during the war period in spite of gasoline restrictions and shortages of various items of sporting goods. The restriction on the sale of shotgun shells during the Fall of 1943 undoubtedly was a factor affecting the sale of hunting licenses.

**Personnel.** During the 1942-44 biennium twenty permanent and part-time employees have entered the armed forces. Only nine of these positions have been filled on a durational basis.

In spite of these losses in personnel and difficulties in obtaining fish and game, the Department has managed to maintain a stocking program which compares favorably with the pre-war years.

The Department is particularly indebted to the Supervisor of Purchases for his unfailing cooperation in endeavoring to secure sufficient gasoline and other motor vehicle supplies to enable the wardens to give their areas reasonable protection and in securing feed for use at the fish hatcheries.

On June 1, 1944, Mr. Gilbert Ahlgren, Accountant-Auditor, who had served the Department for nearly eighteen years was transferred to the Connecticut Agricultural Experiment Station where he holds a more responsible position. The Department keenly regrets the loss of his services, but wishes him well in his new work. He was replaced by Mr. Nelson P. Wainman who was transferred from the State Highway Department.

The members of the office staff have had to assume a great deal of the work formerly done by men who are now on military leave. Much credit is due them for their cheerful and willing cooperation and for the amount and quality of work which they have accomplished.

**Publications.** During the biennium the Department has provided for distribution to sportsmen through the medium of town clerks, sporting goods dealers and other agencies, 25,000 hunting and 25,000 fishing pamphlets each year. These pamphlets give a summary of the more important laws relating to hunting and fishing, a list and map covering the areas under regulation by the Board and regulations for hunting and fishing on these areas.

A second edition of "A Fishery Survey of Important Lakes and Ponds in Connecticut" was printed. This bulletin has had wide circulation and been popularly received.

A bulletin on the "Life History of the Cottontail Rabbit" and one on "Pheasant Mortality and Nesting Success" have been published and distributed.

**Advisory Council.** An organization of sixteen sportsmen, two from each county, known as the Advisory Council, meets with the Board and staff members once a month in an advisory capacity. Its purpose is to improve and expand contacts and cooperation between the Board and the sportsmen of the State. The Board frequently accepts the advice of this body and deeply appreciates the contribution in time and helpful suggestions made by its members.

A list of the present members follows:

*President*—ROBERT L. SULLIVAN, New Milford

*Vice-President*—ARTHUR H. HURLEY, Danbury

**Hartford County**

Merritt W. Treat, Hartford  
Ernest Clark, Windsor

**New Haven County**

<sup>1</sup>Wooster Canfield, Waterbury  
Karl W. Reynolds, Branford

**New London County**

<sup>2</sup>Pierre Theve, Norwich  
<sup>3</sup>Leon J. Bascom, Waterford

**Fairfield County**

Arthur Hurley, Danbury  
<sup>4</sup>George E. Jones, Norwalk

**Windham County**

William R. Ware, Putnam  
<sup>5</sup>Louis B. Tenney, North Windham

**Litchfield County**

George Ganem, Torrington  
<sup>6</sup>Robert L. Sullivan, New Milford

**Middlesex County**

Stanley C. Atwell, Middletown  
Stanley Warner, Chester

**Tolland County**

<sup>7</sup>Raymond I. Longley, Stafford Springs  
Thomas F. Rady, Rockville

<sup>1</sup>Replaced J. P. Montgomery

<sup>2</sup>Replaced E. F. Hall

<sup>3</sup>Replaced George Wargo

<sup>4</sup>Replaced George S. Hopkins

<sup>5</sup>Replaced Leslie R. Hartson

<sup>6</sup>Replaced James W. Concannon

<sup>7</sup>Replaced Neil W. Hosley

**Extension of Seasons.** Under the discretionary power law (Section 535f) the Board extended the trout season in 1942 on all trout waters to July 31 and provided for a further extension of the season on the larger trout streams to and including September 30. In order to permit sportsmen to hunt on Saturday, the Board advanced the hunting season in 1942 to October 17 and extended the pheasant season to December 5.

In 1943 the Board extended the trout season on all trout streams to and including October 31. It advanced the rabbit season from November 1 to October 30 and extended the rabbit season to and including January 16. The pheasant season in 1943 was extended to December 14.

In 1944 the Board extended the season for commercial shad fishing to and including July 2<sup>d</sup> and extended the season on trout to and including October 31 on all trout waters.

**Land and Water Acquisition.** The Legislature of 1943 appropriated \$20,000 to the Commission on Forests and Wildlife for the acquisition of lands and waters for fish and game uses only.

The following properties have been acquired by that agency for the use of the people of the State.

1. Eastford, 3.5 acres—frontage on Bigelow Brook.
2. Portland, 26.3 acres—Wangunk Meadows, hunting land.
3. Salisbury, 1.3 acres—access to East Twin Lake.
4. Stonington, 335 acres—waterfowl and upland game shooting.
5. Ellington, .6 acre—access to Crystal Lake.
6. East Lyme, 30 acres—Dodge Pond is a potential trout pond.

With the appropriation of \$380,000 made available by the 1943 Legislature to the Commission on Forests and Wildlife for purchase of land for State forest purposes, the following acquisitions of interest to fishermen have been made.

**Streams:** At present there are approximately 150 miles of stream leased and owned by the State and open to public fishing. To this amount eleven miles have been added by this program. The recapitulation of these purchases is as follows:

<i>Name</i>	<i>Town</i>	<i>Miles</i>
Fawn Brook	Hebron	1.75
West Meadow Brook	Hebron	1.0
Bigelow Brook	Eastford	1.75*
Green Falls Brook	N. Stonington	1.0
Roaring Brook	Stafford	1.5
Hogs Back Brook	Hartland	0.5
Beaver Brook	Barkhamsted	0.5
Housatonic River	Sharon	0.75
Kent Falls Brook	Kent	0.25
Carse Brook	Sharon	0.25
Punch Brook	Burlington	0.05**
Beaver Brook	Haddam	0.25
Deuce's Brook	Chester	1.0
<b>TOTAL</b>		<b>11.00 miles</b>

**Lakes and Ponds:** The current acquisition program has made some very valuable additions to the pond fishing program of the State of Connecticut. Complete ownership has been acquired of the following:

<i>Name</i>	<i>Town</i>	<i>Acres</i>
Breakneck Pond	Union	80
Bigelow Pond	Union	30
Pinehurst Lake (upper)	Hartland	17
Pinehurst Lake (lower)	Hartland	28

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\*The Bigelow River, the Natchaug River, and its tributaries now have 5½ miles of continuous and permanent state ownership.

\*\*Purchased for the protection of the water supply of the Burlington State Fish Hatchery.

Ownership adjoining has been acquired on the following lakes:

<i>Name</i>	<i>Town</i>	<i>Amount</i>
Wononscopomuc	Salisbury	120 feet
Mashapaug	Union	.1 mile
Black Pond	Woodstock	.2 mile
Deep Hollow Reservoir	Chester	.1 mile
Highland Lake	Winchester	.5 mile

Since most of the land acquired since July 1943 is of forest character and supports ruffed grouse, woodcock, squirrels, raccoon, deer, and fox, it is of benefit to hunters.

The following seem of unusual importance and worthy of mention.

**COCKAPONSET, Chester:** 220 acres. Good stand of hemlock and white cedar.

**HOUSATONIC, Sharon:** 640 acres. Excellent cover for upland game. Six acres on Housatonic River is of such high recreational importance it has been assigned by the Commission on Forests and Wildlife for administration by the State Park and Forest Commission.

**NIPMUCK:** The land in Union and Woodstock purchased from the Quinebaug Forestry Company, containing 4,586 acres will provide many blocks of wildlife cover. The area surrounding Breakneck Pond has always been good raccoon hunting. At present there are beaver near the northern end of the pond. Access and a frontage of about 500 feet on Mashapaug Lake is included in this tract. Bigelow and Black Ponds are also in the tract.

**PAUGNUT:** 454 acres. Joining Burr Pond with Highland Lake, with its shore front on Highland Lake.

**PEOPLES:** 125 acres on Beaver Brook, Barkhamsted.

**SALMON RIVER:** About 300 acres are upland game cover. 225 acres along the West Meadow Brook, a tributary of the Salmon River Hebron.

**TUNXIS:** The Pinehurst Area, about four square miles in Hartland and Colebrook with two lakes.

**WYANTENOCK, Warren:** About 640 acres. Good upland cover.

#### Personnel—Administrative Staff

Mildred K. Bartle, Executive Assistant  
 Nelson Wainman, Assistant Accountant-Auditor  
 Rose Sharfman, Clerk  
 Fiath Crocker, Stenographer  
 Mary Flynn, Typist  
 Katherine Kane, Typist  
 Nancy Corbett, Typist  
 Joan Kane, Clerk

## Financial Statement

July 1, 1942—June 30, 1944

### MEANS OF FINANCING

#### Working Balances

	1942-1943	1943-1944
Game Fund .....	\$ 51,822.21	\$ 33,572.03
Inland Fish Fund .....	60,120.98	58,162.69
Marine Fish Fund .....	4,610.61	4,955.23

#### Receipts from Sale of Hunting and Angling Licenses and Other Sources

Game Fund .....	122,165.20	105,131.26
Inland Fish Fund .....	134,022.15	134,294.74
Marine Fish Fund .....	3,813.35	3,348.75
Appropriation from General Fund .....	56,900.00	67,795.68

<b>Total Cash Resources</b> .....	<b>\$433,454.50</b>	<b>\$407,260.38</b>
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### EXPENDITURES

#### GENERAL FUND

#### Division of Administration

Personal Services .....	\$19,514.59	\$23,036.77
Expenses of Board and Advisory Council .....	741.45	624.01
Expenses of Superintendent .....	434.71	451.29
Expenses of Office .....	2,340.57	2,624.17

<b>Land and Water Acquisition Program</b> .....	<b>\$10,976.71</b>	<b>\$26,736.24</b>
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#### Division of Fisheries

##### Marine

Supervision .....	\$ 1,950.00	\$ 2,085.00
Lobster Restoration .....	5,197.07	5,906.57
*Purchase of Egg-bearing Lobsters .....	4,034.22	3,963.30
Biological Studies .....	15.00	1,947.21
Law Enforcement .....	97.37	
Structural Replacements .....	690.00	

	<b>\$11,983.66</b>	<b>\$13,902.08</b>
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##### Inland

Trout Restoration .....	\$1,514.91	
<b>Division of Law Enforcement</b> .....	<b>\$5,409.95</b>	<b>\$10,865.79</b>

<b>Totals—General Fund Expenditures</b> .....	<b>\$52,916.55</b>	<b>\$65,798.51</b>
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#### GAME FUND

#### Division of Game Restoration

Supervision .....	\$ 4,592.25	\$ 4,639.47
Game Restoration .....	83,759.86	62,872.00
Pittman-Robertson Projects .....	6,215.23	5,073.74

	<b>\$94,567.34</b>	<b>\$72,585.21</b>
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\*Statutory appropriation.

## Division of Law Enforcement

	1942-1943	1943-1944
Warden Service—Salaries .....	\$23,757.93	\$24,327.56
Patrol Service on Regulated Hunting Areas ...	6,788.00	8,295.00
	<u>\$30,545.93</u>	<u>\$32,622.56</u>
Land and Water Acquisition .....	\$11,883.43	
Survey of State Properties .....	\$1,112.58	
Maintenance of Properties .....	\$773.82	\$202.94
Licenses and License Frames .....	\$1,134.88	\$1,390.98
Insurance .....	\$335.02	
Miscellaneous Expenditures .....	\$82.58	\$278.00
<b>Totals—Game Fund Expenditures .....</b>	<u>\$140,435.58</u>	<u>\$107,079.69</u>

## INLAND FISH FUND

## Division of Inland Fisheries

Supervision .....	\$ 8,075.90	\$ 5,912.04
Trout Restoration .....	81,965.27	72,032.08
Pond Fish Restoration .....	4,081.88	3,617.71
Maintenance of Boats .....	121.91	86.62
Biological Survey .....	740.68	
Stream and Pond Improvement .....	563.57	
Maintenance of Properties .....	5,300.00	1,483.99
Survey of State Properties .....	2,320.60	
	<u>\$103,169.81</u>	<u>\$83,132.44</u>

## Division of Law Enforcement

Warden Service—Salaries .....	\$23,916.71	\$24,862.99
Patrol Service on Regulated Waters .....	7,135.88	7,038.81
	<u>\$31,052.59</u>	<u>\$31,901.80</u>
Licenses and License Frames .....	\$1,076.01	\$1,470.15
Insurance .....	\$660.90	\$46.72
Miscellaneous Expenditures .....	\$21.13	\$63.62
<b>Totals—Inland Fish Fund Expenditures .....</b>	<u>\$135,980.44</u>	<u>\$116,614.73</u>

## MARINE FISH FUND

Law Enforcement .....	\$2,020.42	\$3,236.07
Investigational Projects .....	1,082.06	2,333.33
Licenses and License Flags .....	346.55	890.58
<b>Totals—Marine Fish Fund Expenditures .....</b>	<u>\$3,449.03</u>	<u>\$6,459.98</u>
<b>TOTAL EXPENDITURES .....</b>	<u>\$332,781.60</u>	<u>\$295,952.91</u>
Balances .....	*100,672.90	**111,307.47
	<u>\$433,454.50</u>	<u>\$407,260.38</u>

## TOTAL EXPENDITURES—LAW ENFORCEMENT DIVISION

Wardens' Salaries and Expenses .....	\$53,084.59	\$60,056.34
Patrol Service—Regulated Hunting and Fishing Areas .....	\$13,923.88	\$15,333.81

\*Includes \$3,920.35 of General Fund money unexpended and reverted to Treasury.

\*\*Includes \$1,997.17 of General Fund money unexpended and reverted to Treasury.

## BUDGET ESTIMATES

1945-1947

## APPROPRIATION FROM GENERAL FUND

## DIVISION OF ADMINISTRATION

	<i>Requested 1945-1946</i>	<i>Requested 1946-1947</i>
<b>Personal Services</b>		
Permanent .....	\$27,000.00	\$28,080.00
Temporary .....	1,600.00	1,600.00
	<hr/>	<hr/>
	\$28,600.00	\$29,680.00
<b>Expenses of Board and Advisory Council</b>		
Contractual Services .....	\$ 895.00	\$ 1,095.00
<b>Expenses of Superintendent</b>		
Contractual Services .....	\$ 425.00	\$ 425.00
Supplies and Materials .....	225.00	225.00
Equipment (Motor Vehicle) .....	1,500.00	
	<hr/>	<hr/>
	\$ 2,150.00	\$ 650.00
<b>Expenses of Office</b>		
Contractual Services .....	\$ 858.00	\$ 958.00
Supplies and Materials .....	2,600.00	2,600.00
	<hr/>	<hr/>
	\$ 3,458.00	\$ 3,558.00
	<hr/>	<hr/>
	\$35,103.00	\$34,983.00

## LAND AND WATER ACQUISITION PROGRAM

Personal Services (Patrol) .....	\$18,000.00	\$18,000.00
Contractual Services .....	4,133.40	15,373.85
Supplies and Materials .....	5,675.00	1,725.00
	<hr/>	<hr/>
	\$27,808.40	\$35,098.85

## DIVISION OF MARINE FISHERIES

<b>Field Supervision</b>		
Personal Services .....	\$ 2,160.00	\$ 2,160.00
<b>Lobster and Flatfish Restoration</b>		
<b>Personal Services</b>		
Permanent .....	4,460.00	4,680.00
Temporary .....	2,610.00	2,610.00
Contractual Services .....	2,100.00	1,550.00
Supplies and Materials .....	4,310.00	4,310.00
Equipment .....	11,675.00	500.00
	<hr/>	<hr/>
	\$25,155.00	\$13,650.00
<b>Biological Studies</b>		
Personal Service—Temporary .....	\$ 780.00	\$ 780.00
Contractual Services .....	120.00	120.00
Supplies and Materials .....	550.00	550.00
Equipment .....	100.00	100.00
	<hr/>	<hr/>
	\$ 1,550.00	\$ 1,550.00
<b>Purchase of Egg-Bearing Lobsters</b>		
(Statutory Appropriation) .....	\$ 5,000.00	\$ 5,000.00
<b>Totals—Marine Fisheries</b> .....	<hr/>	<hr/>
	\$33,865.00	\$22,360.00

	<i>Requested</i> 1945-1946	<i>Requested</i> 1946-1947
<b>DIVISION OF LAW ENFORCEMENT</b>		
Contractual Services .....	\$ 7,295.00	\$ 6,990.00
Supplies and Materials .....	17,900.00	17,900.00
Equipment .....	21,060.00	
	<hr/>	<hr/>
	\$46,255.00	\$24,890.00
<b>DIVISION OF GAME RESTORATION</b>		
Purchase of Pheasants .....	\$25,000.00	\$25,000.00
<b>MAINTENANCE OF PROPERTIES</b>		
Land and Non-Structural Improvement to Land ..	\$40,872.00	
New Structures .....	65,160.00	
Structural Replacements and Major Improvements	17,935.00	\$ 1,500.00
	<hr/>	<hr/>
	\$123,967.00	\$ 1,500.00
<b>Grand Totals, General Fund Appropriation .....</b>	<hr/> <b>\$291,998.40</b>	<hr/> <b>\$143,831.85</b>

### GAME FUND

#### DIVISION OF GAME RESTORATION

##### Field Supervision

Personal Services—Permanent .....	\$10,080.00	\$10,440.00
Contractual Services .....	750.00	750.00
Supplies and Materials .....	800.00	800.00
Equipment .....	3,500.00	
	<hr/>	<hr/>
	\$15,130.00	\$11,990.00

##### Game Restoration

Personal Services—Temporary .....	\$ 2,513.75	\$ 2,513.75
Contractual Services .....	5,050.00	5,050.00
Supplies and Materials .....	2,450.00	2,450.00
Purchase of Game .....	55,000.00	55,000.00
Equipment .....	2,500.00	
	<hr/>	<hr/>
	\$67,513.75	\$65,013.75

##### Pittman-Robertson Projects

###### Personal Services

Permanent .....	\$ 6,420.00	\$ 6,660.00
Temporary .....	700.00	700.00
Contractual Services .....	1,075.00	1,075.00
Supplies and Materials .....	875.00	825.00
	<hr/>	<hr/>
	\$ 9,070.00	\$ 9,260.00

##### Law Enforcement

Personal Services—Permanent .....	\$35,250.00	\$37,290.00
Equipment .....	9,910.00	5,500.00
	<hr/>	<hr/>
	\$45,160.00	\$42,790.00
<b>Survey of State Properties .....</b>	<b>\$ 2,000.00</b>	

##### Maintenance of Properties

Contractual Services .....	\$ 924.00	\$ 924.00
Supplies and Materials .....	200.00	200.00
	<hr/>	<hr/>
	\$ 1,124.00	\$ 1,124.00

<b>Licenses and Frames .....</b>	<b>\$ 1,500.00</b>	<b>\$ 1,500.00</b>
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	<i>Requested</i> 1945-1946	<i>Requested</i> 1946-1947
<b>Miscellaneous Account</b>		
Contractual Services .....	\$ 216.50	\$ 216.50
Supplies and Materials .....	500.00	500.00
	<hr/>	<hr/>
	\$ 716.50	\$ 716.50
<b>Grand Totals—Game Fund .....</b>	<hr/> <b>\$142,214.25</b>	<hr/> <b>\$132,394.25</b>

## INLAND FISH FUND

## DIVISION OF INLAND FISHERIES

<b>Field Supervision</b>		
Personal Services—Permanent .....	\$ 5,460.00	\$ 5,580.00
Contractual Services .....	600.00	600.00
Supplies and Materials .....	400.00	400.00
Equipment .....	825.00	700.00
	<hr/>	<hr/>
	\$ 7,285.00	\$ 7,280.00
<b>Law Enforcement</b>		
Personal Services—Permanent .....	\$35,250.00	\$37,290.00
Equipment .....	9,910.00	5,500.00
	<hr/>	<hr/>
	\$45,160.00	\$42,790.00
<b>Trout Restoration</b>		
<b>Personal Services</b>		
Permanent .....	\$22,417.50	\$23,597.50
Temporary .....	3,220.00	3,220.00
Contractual Services .....	3,250.00	2,250.00
Supplies and Materials .....	25,450.00	24,950.00
Purchase of Trout .....	30,000.00	30,000.00
Equipment .....	10,326.00	3,500.00
	<hr/>	<hr/>
	\$94,663.50	\$87,517.50
<b>Pond Fish Restoration</b>		
Personal Services—Permanent .....	\$ 3,242.50	\$ 3,402.50
Contractual Services .....	225.00	225.00
Supplies and Materials .....	250.00	250.00
Purchase of Fish .....	2,500.00	2,500.00
Equipment .....	360.00	2,360.00
	<hr/>	<hr/>
	\$ 6,577.50	\$ 8,737.50
<b>Maintenance of Boats</b>		
Contractual Services .....	\$ 135.00	\$ 135.00
Supplies and Materials .....	100.00	100.00
	<hr/>	<hr/>
	\$ 235.00	\$ 235.00
<b>Biological Survey</b>		
<b>Personal Services</b>		
Permanent .....	\$ 6,360.00	\$ 6,480.00
Temporary .....	1,800.00	1,800.00
Contractual Services .....	1,000.00	1,000.00
	<hr/>	<hr/>
	\$ 9,160.00	\$ 9,280.00
<b>Survey of State Property</b>		
Contractual Services .....	\$ 2,000.00	.....
	<i>Requested</i> 1945-1946	<i>Requested</i> 1946-1947
<b>Licenses and Frames</b>		
Supplies and Materials .....	\$ 1,500.00	\$ 1,500.00

**Miscellaneous**

Supplies and Materials .....	\$ 500.00	\$ 500.00
<b>Totals—Inland Fish Fund .....</b>	<u>\$167,081.00</u>	<u>\$157,840.00</u>

**MARINE FISH FUND****MARINE FISH FUND****Law Enforcement**

Personal Services—Permanent .....	\$ 2,880.00	\$ 2,880.00
Contractual Services .....	275.00	275.00
Supplies and Materials .....	475.00	475.00
Equipment .....	700.00	
	<u>\$ 4,330.00</u>	<u>\$ 3,630.00</u>

<b>GRAND TOTALS .....</b>	<u>\$605,623.65</u>	<u>\$437,696.10</u>
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**SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1942**

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minors)	Special Combination*	Nonresident Angling	Nonresident Property Owner Angling	Nonresident Hunting	Nonresident Property Owner Hunting	Nonresident Combination	Nonresident Property Owner Combination	Alien Angling	Alien Property Owner Angling	Resident Temporary† Angling	Nonresident Temporary Angling‡	Special**	Total Revenue
Hartford ..	11,368	6,846	2,801	150	121	201	70	63	15	28	3	..	4	103	50	113	43	1,346	
New Haven	7,430	5,693	1,890	86	84	65	52	43	4	8	4	..	4	49	43	75	27	1,131	
New London	2,236	2,099	572	88	56	33	28	66	12	11	13	5	1	17	13	16	51	428	
Fairfield ..	4,621	5,105	1,455	101	77	120	47	200	17	31	6	..	..	37	13	83	138	874	
Windham .	1,869	1,211	523	66	50	50	51	175	10	29	9	3	5	26	13	14	37	398	
Litchfield .	4,697	2,376	1,278	91	55	44	70	255	53	29	13	6	5	19	25	65	264	737	
Middlesex .	1,154	1,551	425	78	69	74	24	26	6	13	1	1	..	3	2	11	42	305	
Tolland ...	1,636	1,018	492	48	29	35	38	62	14	12	6	2	2	8	11	11	28	249	
Office .....	.....	.....	.....	.....	.....	.....	.....	2	....	1	..	..	..	..	..	..	2	..	
<b>Totals ....</b>	<b>35,011</b>	<b>25,899</b>	<b>9,436</b>	<b>708</b>	<b>541</b>	<b>622</b>	<b>380</b>	<b>892</b>	<b>131</b>	<b>162</b>	<b>55</b>	<b>17</b>	<b>21</b>	<b>262</b>	<b>170</b>	<b>388</b>	<b>630</b>	<b>5,468</b>	
Revenue ..	\$105,033	\$77,697	\$47,180	\$3,540	\$1,623	\$622	\$2,660	\$4,541.10	\$393	\$1,620.35	\$165	\$238	\$105	\$1,310	\$510	\$388	\$945.70	no fee	\$248,755.15

\*Resident Hunting, Trapping and Angling.

\*\*For residents over sixty-five years of age. Issued on payment of recording fee only. This license is issued for hunting, angling, or combination hunting and angling privileges.

†Issued only during last six months of year.

In addition: 18 resident one-day hunting licenses;  
52 nonresident one-day hunting licenses; and  
5 nonresident fox hunting licenses were issued. (Receipts \$184)

SUMMARY, 1942

	Number Issued	Total Income	Average Yield per License to Department
Angling Licenses (all types) .....	42,221	\$106,084.52	2.51
Hunting Licenses (all types) .....	52,806	137,768.97	2.68
Trapping Licenses (all types) .....	2,251	4,901.66	2.18
<b>TOTAL .....</b>	<b>97,278</b>	<b>\$248,755.15</b>	<b>2.56</b>

**SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1943**

County	Resident Angling	Resident Hunting	Resident Combination	Resident Trapping and Hunting	Resident Trapping	Resident Trapping (Minors)	Special Combination*	Nonresident Angling	Nonresident Property Owner Angling	Nonresident Hunting	Nonresident Property Owner Hunting	Nonresident Combination	Nonresident Property Owner Combination	Alien Angling	Alien Property Owner Angling	Resident Temporary†	Nonresident Temporary Angling†	Special**	Total Revenue
Hartford ..	9,744	4,999	3,044	114	158	169	71	72	15	27	6	2	1	106	46	131	37	1,337	
New Haven	6,160	4,468	1,966	90	62	79	44	37	3	11	1	..	5	36	32	70	13	1,091	
New London	2,262	1,730	712	67	54	43	31	48	10	17	10	2	3	20	19	16	45	495	
Fairfield ..	3,814	3,953	1,453	82	81	111	45	159	15	28	5	1	1	24	14	104	103	856	
Windham ..	1,822	866	680	47	34	36	57	162	11	39	6	6	6	17	18	15	22	411	
Litchfield ..	3,986	1,721	1,369	71	43	47	60	212	53	28	6	8	3	15	16	84	253	787	
Middlesex ..	1,195	1,188	559	78	79	73	27	25	3	15	..	..	..	5	4	18	37	317	
Lolland ...	1,479	719	671	22	26	29	31	57	18	22	2	1	1	14	13	12	41	281	
Office .....	....	....	....	..	..	..	..	8	..	3	..	..	..	1	..	..	5	....	
Totals ....	30,462	19,644	10,454	571	537	587	366	780	128	190	36	20	20	238	162	450	556	5,575	
Revenue ..	\$91,386	\$58,932	\$52,270	\$2,855	\$1,611	\$587	\$2,562	\$3,903.55	\$384	\$1,901.05	\$108	\$280	\$100	\$1,190.50	\$486	\$450	\$835.75	no fee	\$219,965.85

\*Resident Hunting, Trapping and Angling.

\*\*For residents over sixty-five years of age. Issued on payment of recording fee only. This license is issued for hunting, angling, or combination hunting and angling privileges.

†Issued only during last six months of year.

In addition: 19 resident one-day hunting licenses;

33 nonresident one-day hunting licenses; and

3 nonresident fox hunting licenses were issued. (Receipts \$124)

**SUMMARY, 1943**

	Number Issued	Total Income	Average Yield per License to Department
Angling Licenses (all types) .....	49,211	\$125,814.80	2.56
Hunting Licenses (all types) .....	36,931	89,671.55	2.16
Trapping Licenses (all types) .....	2,475	4,479.50	1.81
<b>TOTAL .....</b>	<b>88,617</b>	<b>\$219,965.85</b>	<b>2.46</b>

## Game Restoration

### Pheasant Purchase and Distribution

The problem of providing upland-bird hunting acceptable to Connecticut sportsmen has become more difficult as the social and agricultural conditions within the State have changed. Connecticut is a small state and has a large population, many of whom are hunters. The number of hunters is greater than in the past with the result that hunting pressure has become more acute. Much of the State is urban or forested hills which are unsuitable to the more prolific game birds. It seems certain that the best possible production of native birds (grouse, quail and woodcock) would not begin to furnish shooting for the licensed hunters who are interested in this sport. Attaining this production of native species is hampered by a lack of knowledge of their needs and the expense, difficulty or impossibility of furnishing these needs when they are known. For example, quail were abundant during the period of greatest agricultural use of the Connecticut lands, when the growing of small grains was the important farm activity. Today they furnish limited hunting only in the parts of the State where the winters are mildest. No change in the climate of the State has brought this about but without the food supply furnished by grain fields the birds do not survive except where conditions are most favorable. It is obviously impossible to make a change in the amount and kind of farming practiced in the State to promote a larger quail population.

This problem of providing acceptable bird hunting is not new. The laws relating to seasons and bag limits constitute one of the devices long in use to aid in the solution. Another plan that was tried at an early date was the importation and liberation of exotic species. The liberation of pheasants is one aid in the problem of providing acceptable hunting that has proved its value over a long period of time. The ringneck pheasant has become acclimated within the State and a considerable business has grown up here in the propagation and raising of these birds for sale. The place that this bird has in the avi-fauna of the State is and will continue to be precarious however. Except for the better agricultural land in our larger stream valleys, which includes the residential areas of some of our large cities, the pheasant would probably disappear within a few years if hunting continued and liberations did not.

State law requires that all purchases must be made through the office of the State Supervisor of Purchases. Since the cost of the pheasants purchased for delivery at one time is over one thousand dollars, competitive sealed bids are required. This system of purchasing requires a considerable amount of detailed work. Complete cooperation has been received from the State Supervisor of Purchases in the procurement of large numbers of pheasants in various sex ratios from several breeders and at different dates.

TABLE I  
PHEASANTS PURCHASED AND LIBERATED

1942				
	Cocks	Hens	Total	Cost
Spring .....	1,257	4,371	5,628	\$13,023.05
Early Fall .....	1,887	4,625	6,512	10,454.88
During Season .....	14,362		14,362	31,811.10
Post Season .....		3,075	3,075	5,633.30
<b>TOTALS</b> .....	<b>17,506</b>	<b>12,071</b>	<b>29,577</b>	<b>\$60,922.33</b>
Total Purchased .....	29,577	*Spring .....	3	
Total lost or died in transit* .....	48	Early Fall ...	3	
		During Season	39	
Total Liberated .....	29,529	Post Season .	3	
			48	

1943				
	Cocks	Hens	Total	Cost
Spring .....	1,689	7,196	8,885	\$24,411.29
During Season .....	11,937	71	12,008	32,892.53
Post Season .....		4,408	4,408	12,804.06
<b>TOTALS</b> .....	<b>13,626</b>	<b>11,675</b>	<b>25,301</b>	<b>\$70,107.88</b>
Total Purchased .....	25,301	*Spring .....	4	
Died or Escaped* .....	34	During Season	20	
		Post Season .	10	
Total Liberated .....	25,267		34	

Allotments for the purchase of pheasants are made for a fiscal year period (July 1-June 30). Invitations to bid are sent out to the game breeders in the spring of each year and contracts are placed for all the birds that will be needed for distribution in the fall of that year and the spring of the following year. By placing contracts in this manner the breeders are able to plan their production according to the contracts they receive, and the Department has reasonable assurance that pheasants will be available for distribution without the necessity and uncertainty of going into the open market for birds. Although this method of contracting for pheasants, on the yearly production of the game breeders, gives the Department reasonable assurance that birds will be available, it does have one disadvantage. Any changes made in the distribution policy which would affect pheasant stocking in the spring cannot be put into effect for at least a year.

Although pheasants are purchased on a fiscal year basis it seems advisable to report here the purchase and distribution of birds on a calendar year basis. This allows a more direct comparison between the stockings and the hunting season that they affect.

TABLE II

## PHEASANT DISTRIBUTION BY WARDEN DISTRICTS—YEAR 1942

DISTRICT	SPRING			EARLY FALL			DURING SEASON		POST SEASON		TOTAL	
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Cocks	Hens	Total	
I—Litchfield .....	163	521	684	205	524	729	1,952	317	2,320	1,362	3,682	
II—Hartford .....	130	607	737	276	693	969	1,744	415	2,150	1,715	3,865	
III—New Haven .....	182	692	874	215	538	753	2,369	452	2,766	1,682	4,448	
VI—Fairfield .....	156	468	624	166	416	582	2,347	450	2,669	1,334	4,003	
V—Tolland .....	263	900	1,163	474	1,081	1,555	2,228	836	2,965	2,817	5,782	
VI—Windham .....	129	457	586	170	413	583	1,378	148	1,677	1,018	2,695	
VII—New London .....	141	468	609	247	625	872	1,368	294	1,756	1,387	3,143	
VIII—Middlesex .....	83	230	313	133	333	466	937	160	1,153	723	1,876	
TOTALS .....	1,247	4,343	5,590	1,886	4,623	6,509	14,323	3,072	17,456	12,038	29,494	
Birds used on P-R Project .....	8	27	35	.....	.....	.....			8	27	35	
Died or escaped .....	2	1	3	1	2	3	39	3	42	6	48	
TOTALS .....	1,257	4,371	5,628	1,887	4,625	6,512	14,362	3,075	17,506	12,071	29,577	

## PHEASANT DISTRIBUTION BY WARDEN DISTRICTS—YEAR 1943

DISTRICT	SPRING			DURING SEASON			POST SEASON		TOTAL	
	Cocks	Hens	Total	Cocks	Hens	Total	Hens	Cocks	Hens	Total
I—Litchfield .....	156	778	934	1,519		1,519	350	1,675	1,128	2,803
II—Hartford .....	187	933	1,120	1,470		1,470	694	1,657	1,627	3,284
III—New Haven .....	219	1,091	1,310	1,975		1,975	612	2,194	1,703	3,897
IV—Fairfield .....	240	1,195	1,435	1,914		1,914	650	2,154	1,845	3,999
V—Tolland .....	322	1,608	1,930	1,954	71	2,025	1,337	2,276	3,016	5,292
VI—Windham .....	131	655	786	1,171		1,171	332	1,302	987	2,289
VII—New London .....	149	743	892	1,055		1,055	288	1,204	1,031	2,235
VIII—Middlesex .....	79	395	474	859		859	135	938	530	1,468
TOTALS .....	1,483	7,398	8,881	11,917	71	11,988	4,398	13,400	11,867	25,267
Died or Escaped .....	1	3	4	20		20	10	21	13	34
TOTALS .....	1,484	7,401	8,885	11,937	71	12,008	4,408	13,421	11,880	25,301

The number of adult or near-adult pheasants purchased and liberated by the Department, and their cost for the calendar years 1942 and 1943 is given in Table I. The rising cost of birds is apparent from the smaller number of pheasants liberated in 1943 at increased cost. Table II shows the distribution of these birds for the two years by Warden Districts.

### Pheasant Liberation Dates

In 1941 changes in the liberation dates of pheasants were made. Dates of stocking were adopted which would provide the best results as indicated by the hunter bag. Stocking of adult cock birds during the hunting season is the surest way of bringing stocked birds to bag and these liberations have been continued. The liberation of pheasants of 12-14 weeks of age in August (Early Fall) was not a satisfactory method of supplying cocks for the hunting season or hens as breeders for the following year and was discontinued in 1943. Much of the best recent information on pheasant losses shows that such losses are small during the winter months. Birds that have overwintered in the wild are superior to newly stocked pheasants as breeders. To take advantage of these facts the liberation of hen birds immediately after the close of the pheasant hunting season was begun in 1942 and continued in 1943 with satisfactory results. Liberations of birds in the spring as breeding stock have been continued since these birds are second only to resident pheasants in their ability to raise broods. These birds can be liberated in coverts that have been cleared of pheasants, or to provide more breeding stock than a covert can overwinter.

### Cooperative Pheasant Rearing Program

In 1942 a change was made in the cooperative pheasant rearing plan that previously had been in effect. Instead of furnishing pheas-

TABLE III

### BANDED COCK PHEASANTS LIBERATED AND BANDS RETURNED

	1942		
	Number of Banded Cock Birds Liberated	Bands Returned	% of Bands Returned
Spring (April-May) .....	1,219	43	3.5
Early Fall (August-Sept.) .....	2,913	290	10.0
During Season (Oct.-Nov.) .....	14,307	3,080	21.5
TOTAL .....	18,439	3,413	18.5
	1943		
Spring (April-May) .....	1,040	8	.8
During Season (Oct.-Nov.) .....	6,954	1,243	17.9
TOTAL .....	7,994	1,251	15.6

TABLE IV  
PHEASANT BAND RETURNS—BY DISTRICTS

1942	APRIL-MAY LIBERATIONS			AUG.-SEPT. LIBERATIONS			OCT.-NOV. LIBERATIONS			TOTAL LIBERATIONS		
	Banded Cocks Liberated	Bands Returned No.	%	Banded Cocks Liberated	Bands Returned No.	%	Banded Cocks Liberated	Bands Returned No.	%	Banded Cocks Liberated	Bands Returned No.	%
Litchfield—I .....	168	5	3.0	240	40	16.7	1,943	559	28.8	2,351	604	25.7
Hartford—II .....	130	5	3.8	276	33	12.0	1,684	305	18.1	2,090	343	16.4
New Haven—III .....	124	7	5.6	373	32	8.6	2,202	312	14.2	2,699	351	13.0
Fairfield—IV .....	161	4	2.5	226	25	11.1	2,395	507	21.2	2,782	536	19.3
Tolland—V .....	282	11	3.9	721	58	8.0	2,285	591	25.9	3,288	660	20.1
Windham—VI .....	132	5	3.8	595	59	9.9	1,440	234	16.3	2,167	298	13.8
New London—VII .....	141	3	2.1	319	34	10.7	1,330	394	29.6	1,790	431	24.1
Middlesex—VIII .....	81	3	3.7	163	9	5.5	1,028	178	17.3	1,272	190	14.9
TOTAL .....	1,219	43	3.5	2,913	290	10.0	14,307	3,080	21.5	18,439	3,413	18.5
1943												
Litchfield—I .....	115	0	0				1,341	439	32.7	1,456	439	30.2
Hartford—II .....	136	1	0.7				958	74	7.7	1,094	75	6.9
New Haven—III .....	155	0	0				761	95	12.5	916	95	10.4
Fairfield—IV .....	119	0	0				659	52	7.9	778	52	6.7
Tolland—V .....	319	1	0.3				2,009	420	20.9	2,328	421	18.1
Windham—VI .....	82	3	3.7				348	39	11.2	430	42	9.8
New London—VII .....	82	3	3.7				506	95	18.8	588	98	16.7
Middlesex—VIII .....	32	0	0				372	29	7.8	404	29	7.2
TOTAL .....	1,040	8	0.8				6,954	1,243	17.9	7,994	1,251	15.6

ant eggs to cooperators, the eggs were hatched in commercial incubators and the day-old pheasant chicks were distributed. In 1943 the day-old chicks were purchased directly from the pheasant breeders for distribution. This change to distributing day-old chicks has reduced the time and care that cooperators must put in and has increased the effectiveness of the program. During this biennium 5,310 birds were liberated from 10,703 chicks furnished, an average of 50%; during the preceding two years 15,960 eggs were distributed from which 4,010 birds were raised and liberated, 25% of the number of eggs.

### Pheasant Banding Studies

Since 1941 most of the cock pheasants liberated by the Department have been banded. This includes nearly all of the birds purchased by the Department, some of those raised from day-old chicks and some of those purchased by clubs. On certain areas there may be a number of pheasants killed during the hunting season that are not banded but which were released birds. In general, throughout the State as a whole, any unbanded cock killed was raised in the wild.

Patrolmen's reports from twenty-five regulated hunting areas in 1942 show that 603 banded cocks were checked after having been taken by hunters, and 512 that were unbanded. It would appear from these figures that half of the pheasants bagged that year were raised in the wild. In 1943 reports from thirty-one areas give 808 banded cocks checked and 652 unbanded, about 55% released and 45% wild birds. This seems reasonable since the 1943 season was a poor one for birds in the wild.

Table III shows the number of banded cocks liberated each year for the past two years and the number of these bands that have been returned. Table IV gives some information about the banded birds. It appears, from the bands returned in 1942, that more than twice as many cocks from "Oct.-Nov. Liberations" were bagged as were those stocked in "Aug.-Sept. Liberations". Information of this kind makes possible advantageous changes in policy. The smaller percent of all bands returned in 1943 compared to 1942 is probably due to a lack of time and interest on the part of the hunters in returning bands rather than to a reduced percent of kill. This trend is unfortunate. In 1941 20.6% of all bands placed on cocks were returned, 18.5% of the 1942 bands and 15.6% of the 1943 bands. If this trend continues it may impair the value of this source of information. It is thought that the variations in the percent of bands returned is an indication of the interest taken by hunters in pheasants. The percentage figures of total bands returned for 1943 seem to be in nearly inverse ratio to the natural production of pheasants. At least the two districts that are lowest in percent returned should be better pheasant producing area than the district that made the highest return.

TABLE V  
RECORD OF BANDS RETURNED WITH AND WITHOUT REPORT OF DATE TAKEN

1942	April-May Liberations				Aug.-Sept. Liberations				Oct.-Nov. Liberations				Total Liberations			
	Bands Returned with and Without Date of Kill And Percentage of Each				Bands Returned with and Without Date of Kill And Percentage of Each				Bands Returned with and Without Date of Kill And Percentage of Each				Bands Returned with and Without Date of Kill And Percentage of Each			
District	W.	%	W.O.	%	W.	%	W.O.	%	W.	%	W.O.	%	W.	%	W.O.	%
I .....	1		4		11		29		179		380		191		413	
II .....	4		1		15		18		180		125		199		144	
III .....	3		4		23		9		177		135		203		148	
IV .....	2		2		17		8		211		296		230		306	
V .....	7		4		41		17		270		321		318		342	
VI .....	2		3		17		42		90		144		109		189	
VII .....	2		1		12		22		136		258		150		281	
VIII .....	3		0		4		5		135		43		142		48	
TOTAL	24	55.8	19	44.2	140	48.3	150	51.7	1,378	44.7	1,702	55.3	1,542	45.2	1,871	54.8
1943																
I .....	0		0						11		428		11		428	
II .....	1		0						27		47		28		47	
III .....	0		0						41		54		41		54	
IV .....	0		0						5		47		5		47	
V .....	0		1						144		276		144		277	
VI .....	0		3						19		20		19		23	
VII .....	2		1						40		55		42		56	
VIII .....	0		0						18		11		18		11	
TOTAL	3	37.5	5	62.5					305	24.5	938	75.5	308	24.6	943	75.4

The mere return of a pheasant band is of interest and, when it is known whether or not the bird was taken by a hunter, can be used directly to determine the effectiveness of stocking in increasing the hunter bag. In order to be most valuable it is necessary to know when and where the birds were killed. With this information it is possible to decide which areas the birds tend to leave soon after liberation, on which areas they remain, and how long any group of liberated birds will furnish hunting. Table V gives the number and percent of the bands that were returned with such information. Again a decline in the interest of the sportsmen is indicated. Of the bands returned in 1942, 45% gave the date of kill. Less than 25% of the bands returned in 1943 were accompanied by this information. The date of kill therefore is known for slightly more than 8% of the birds banded in 1942, for less than 4% of those banded in 1943. This sample is too small to be of use for any one year. Not until a number of years' returns can be considered together can useful information be obtained from them.

### Quail Purchase and Distribution

The quail population of three counties in the State—New London, Middlesex and New Haven—has justified an open season on these birds. In 1942 the open season was from November 2 to November 21 with a daily bag limit of three birds. In 1943 it was from November 8 to November 27 with the same bag limit. Although considerable interest is shown by sportsmen in quail the kill does not appear to be large.

The ability of the quail in part of the State to support limited hunting for several years and still maintain or increase their numbers, while the population in parts of the State where they are protected remained static or declined, has affected the policies in regard to quail stocking. Continued stocking in parts of the State that had not demonstrated that conditions were suitable were curtailed or abandoned and liberations increased thereby in the areas where quail were successful. This policy should insure adequate breeding stock to populate any areas where conditions are suitable. The hunting pressure on this species does not appear to be heavy enough to need the supplemental stocking during the hunting season which is necessary for satisfactory pheasant hunting. Table VI gives the purchase and distribution of quail for the biennium.

### Grain Planting

There are at least four methods, which meet with varying success under different conditions, of increasing the food supply available for game birds: (1) the planting of patches of cultivated grain to be left as food; (2) agreements to have portions of grain fields, grown in regular farming operations, left for the game birds; (3) planting or otherwise encouraging the growth of wild plants that furnish satisfactory food; (4) the placing of grain at places afield

TABLE VI  
REPORT OF QUAIL PURCHASE AND DISTRIBUTION 1942-1943

	QUAIL PURCHASE				QUAIL PURCHASE			
	YEAR 1942				YEAR 1943			
	Cocks	Hens	Total	Total Cost	Cocks	Hens	Total	Total Cost
Spring .....	344	340	684	\$1,643.00	507	493	1,000	\$2,125.00
Fall .....	425	425	850	1,146.80	274	261	535	788.25
Total ....	769	765	1,534	\$2,789.80	781	754	1,535	\$2,913.25

## LIBERATIONS 1942

	SPRING			FALL			TOTAL		
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total
District I— Litchfield .				10	10	20	10	10	20
District II— Hartford .				160	160	320	160	160	320
District III— New Haven	109	105	214				109	105	214
District V— Tolland ...				255	255	510	255	255	510
District VII— New London	160	160	320				160	160	320
District VIII— Middlesex .	71	70	141				71	70	141
Total ...	340	335	675	425	425	850	765	760	1,525
Died in Transit	4	5	9				4	5	9
Total .....	344	340	684	425	425	850	769	765	1,534

## LIBERATIONS 1943

	SPRING			FALL			TOTAL		
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total
District III— New Haven	204	202	406	100	100	200	304	302	606
District V— Tolland ...				32	18	50	32	18	50
District VII— New London	198	182	380	115	115	230	313	297	610
District VIII— Middlesex .	105	105	210	27	28	55	132	133	265
Total ...	507	489	996	274	261	535	781	750	1,531
To University of Connecticut		4	4					4	4
Total .....	507	493	1,000	274	261	535	781	754	1,535

where the birds will feed on it, and maintaining the supply at periods of the year when the need of supplemental food is apparent.

All four methods are used by the Department but most emphasis is placed on the first, which is reported on here and the fourth which will be considered in the section on Winter Feeding. The work done is primarily to benefit the pheasant but in areas where quail occur it is modified to benefit them as well.

It is obvious, from the success of pheasants in the north central States and the previous abundance of quail throughout Connecticut and Massachusetts, that winter cold and snows, even long continued, are not limiting factors in the distribution of these birds. In cold-chambers these species have been subjected to winter conditions so extreme and long continued as to be almost unheard of in Connecticut and have survived. The past and present abundance and distribution of quail is evidence, however, that fall and winter food supplies can have a remarkable effect on birds. Studies within the State show that waste grain, weed seed, and wild fruits are available most years in amounts sufficient to over-winter, during normal winters, the game birds that survive the hunting season or are liberated after it closes. The need, in most years, is not for quantity of food but to insure that food will be available every year independently of normal supply and that some other dangers to the birds, controllable through the food supply, be avoided. This control and distribution of the pheasant population, for their own good, through control of sources of desirable food has not had the consideration which it deserves but it is the chief reason that the planting of patches of grain is superior to supplying food at winter feeding stations. A food patch may begin to influence the habits of the birds as early as the latter part of June, while the feeding station can rarely be established before the close of the hunting season in late November.

Studies of pheasants in the wild continually emphasize the small area on which most birds spend their lives. Normally they hatch, are raised, overwinter, and raise their broods on an area of five acres. In contrast to this, we have the considerable distances traveled by some of the numerous released birds that have been banded, from the point of liberation, ten, twenty, seventy miles to the place where they are killed; and the generally unsatisfactory percentage of liberated cocks which are ever bagged. It becomes clear that our pheasants succeed best on familiar ground and are subject to heavy losses from predation and accidents when they move any distance. Liberated birds in search of suitable range or wild birds forced to move due to lack of food, cover, or mates, or through the harassing activities of numerous persons, dogs, livestock and the like are extremely vulnerable. Surprisingly few such birds survive to become established elsewhere.

Food patch plantings provide areas of cover that are relatively free from disturbance. Young pheasants find in these patches an abundance of insects, which make up a large part of their food. Corn

is particularly satisfactory as a fall and winter food for pheasants and cornfields are favored by hens with broods. The fields lose their usefulness when harvested, but food patch plantings may provide their greatest benefits in early spring when natural foods are most nearly gone. Except by broods of young birds the food patches are not commonly used for roosting. Swamp areas having grass for cover are preferred for this purpose. The patches may be used as escape cover by pheasants at almost any season but primarily they furnish food, dusting sites, and safe daytime resting areas. The food patches should be located so that birds are not exposed to accidents or predators in moving to and from roosting sites. Well traveled roads that run between roosting and feeding areas are a serious accident hazard. Heavily grazed pasture, affording no cover, is an invitation to winged predators when the birds must cross it in going and coming from roosts to food. Judicious location of food patches in such cases can remove the necessity for birds to expose themselves. Concentrations of birds in food patches are sometimes an invitation to predators but the patches, having a larger area, are not as dangerous in this respect as feeding stations. Neither are the patches more dangerous than areas of natural food, since natural food commonly occurs concentrated in small areas. Care is taken to have more than

TABLE VII  
SUMMARY OF ACREAGE AND COST OF GRAIN PLANTINGS

District	1943			Total Cost
	Acres of Corn	Acres of Small Grain	Total Acres	
Litchfield I .....		3	3	\$ 59.50
Hartford II .....	7.5	25	32.5	1,062.82
New Haven III .....	1.5	1.5	18.0	705.50
	15.0*			
Fairfield IV .....	9.5		9.5	607.80
Tolland V .....	4.25	9.25	13.5	403.50
Windham VI .....	8.00	21.00	29.0	1,141.20
New London VII .....	.50	6.50	7.0	413.30
Middlesex VIII .....	.50	3.25	3.75	249.80
Total .....	46.75	69.50	101.25	\$4,643.42
*Pittman Robertson Project				
District	1944			Total Cost
	Acres of Corn	Acres of Small Grain	Total Acres	
Litchfield I .....		2.5	2.5	\$ 54.00
Hartford II .....	11.75	11.75	23.50	796.50
New Haven III .....	.75	.75	12.75	641.50
	11.25*			
Fairfield IV .....	8.50		8.50	535.25
Tolland V .....	2.75	4.0	6.75	326.50
Windham VI .....	10.5	27.5	38.00	1,476.30
New London VII .....	2.5	8.0	10.5	680.00
Middlesex VIII .....	.75	2.5	3.25	252.00
Total .....	48.75	57.0	105.75	\$4,762.05
*Pittman-Robertson Project				

one food patch if the pheasant population in a covert requires. In addition the patches are located with other escape cover adjacent, while natural food supplies do not always have other cover nearby.

The food patch plantings carried on during this biennium were begun in their present form, under direct Warden Service supervision, in the spring of 1941. The area planted has been increased each year which has been a notable achievement under present conditions. In addition to these plantings numerous sportsmen's clubs and interested individuals have made additional plantings or left patches from regular farm operations. This program of the Department reported in Table VII is given in acres for ready comparison. The food plots, however, varied in size from one-quarter of an acre to one acre with the average about a half acre. Hence the acreage can be doubled to give an estimate of the number of patches planted. The total of food patches planted is not impressive compared to the area of the State or even to that part of it which overwinters pheasants but, judiciously located, the patches are a real contribution to the pheasant habitat of the State. With a return to normal a considerable expansion of these plantings seems desirable.

### Winter Feeding

As previously mentioned supplemental feeding of overwintering game bird populations is probably not necessary over much of Connecticut during some winters. It may be imperative during other years. The winter of 1942-1943 was one such. The replacement cost of birds fed during that winter would more than justify the cost of the winter feeding program for years to come.

Tables VIII and IX give the number of feeding stations maintained during the two years covered by this report and an estimate of their use. A natural outgrowth of the winter feeding work has been the estimates of birds using the feeding stations. These estimates are made in the early spring and furnish the Department with the best comparison of overwintering pheasant populations from year to year and the sex ratio of the breeding population. In the "Summary of Winter Feeding Statistics", Table X, it is felt that the average number of pheasants fed per station is the best comparative figure for the size of the overwintered population. This figure increases during the period, to a peak in the spring of 1943. Hunting would have been better that fall had it not been for the poor breeding season that year,—rains during the time of hatching and the drought that followed. Considerable satisfaction is felt in the ratio of cocks to hens in the overwintered population of 1943-1944. The changes in stocking which brought this about are evidently accomplishing their purposes in allowing hunters to take about the maximum number of cocks and insuring greater survival of hens.

**TABLE VIII**  
**WINTER FEEDING STATIONS**  
**PHEASANT AND QUAIL COUNT 1942-1943**

	Stations	Pheasants			Quail
		Cocks	Hens	Total	
District I .....	104	146	383	529	
District II .....	44	209	453	662	
District III .....	171	....	....	396	202
District IV .....	67	....	....	....	....
District V .....	98	162	776	938	117
District VI .....	106	171	317	488	111
District VII .....	50	83	135	218	....
District VIII .....	36	37	165	202	256
	676	808	2,229	3,433	686

**TABLE IX**  
**WINTER FEEDING STATIONS**  
**PHEASANT AND QUAIL COUNT 1943-1944**

	DISTRICTS				Quail
	Stations	Cocks	Hens	Total	
District I					
Regulated .....	41	26	122	148	
Open .....	8	5	10	15	
Both .....	49	31	132	163	
District II					
Regulated .....	42	103	404	507	
Open .....	41	47	207	254	5
Both .....	83	150	611	761	5
District III					
Regulated .....	124				
Open .....	68				
Both .....	192			372*	
District IV					
Regulated .....	54	14	89	103	
Open .....	46	16	72	88	
Both .....	100	30	161	191	
District V					
Regulated .....	111	106	663	769	122
Open .....	4	3	40	43	12
Both .....	115	109	703	812	134
District VI					
Regulated .....	43	66	121	187	8
Open .....	59	20	161	181	51
Both .....	102	86	282	368	59

District VII					
Regulated .....	30	60	170	230	230
Open .....	19	47	104	151	410
Both .....	49	107	274	381	640
District VIII					
Regulated .....	9	8	36	44	75
Open .....	37	23	100	123	402
Both .....	46	31	136	167	477
STATE WIDE					
Regulated .....	454	383	1,605	1,988	435
Open .....	282	161	694	855	880
TOTAL .....	736	544	2,299	2,843	1,315
				372	
				3,215*	

\*This total is 372 more than the sum of the cocks and hens here given due to the fact that the wintering population of District No. 3 was estimated from last year and is here included.

**TABLE X**  
**SUMMARY OF WINTER FEEDING STATISTICS**

(Winter) Year	Stations	Pheasants		Total	Pheasants Fed Per Station	Sex Ratio
		Cocks	Hens			
1939-1940 .....	500	679	890	1,569	3.13	1-1.3
1940-1941 .....	.....	508	1,473	1,981	.....	1-2.9
1941-1942 .....	621	523	1,517	2,040	3.28	1-2.9
1942-1943 .....	676	808	2,229	3,037	4.49	1-2.76
1943-1944 .....	736	544	2,299	3,215*	4.36	1-4.2
Average .....	633	612	1,681	2,368	3.74	1-2.8

\*This total is 372 more than the sum of the cocks and hens given due to the fact that the wintering population of District No. 3 was estimated from last year and is here included.

### Raccoon

The Department's efforts to increase the number of raccoon have centered on the cooperative raccoon propagation program with sportsmen's clubs. The members of these clubs are genuinely interested in the program and their contribution has been greater than the tabulations might indicate, since numerous obstacles have been overcome in order to continue the work.

The raccoon colony which is a joint responsibility of the Department and the Forest & Wildlife Department of the University of Connecticut is at present on a maintenance basis. No releases of raccoon were made from this source in 1943 because of the small number of young raised and escapes due to the poor condition of the pens. The colony will be maintained at about 20 animals as an immediate source of breeding stock for post-war expansion of the raccoon program.

The following summary report of raccoon liberations during the biennium and their cost compares favorably with the figures from the preceding biennium.

TABLE XI  
RACCOON LIBERATIONS

COOPERATIVE LIBERATIONS	1942				1943	
	Young No.	Cost to Dept.	Adult No.	Cost to Dept.	No.	Cost to Dept.
Candlewood Coon Club .....	2	\$ 6.50	5	\$ 18.75	7	\$ 26.25
Eastern Conn. Field Trial Assoc. ....	7	22.75	25	93.75		
Manchester Fox & Coon .....					7	26.25
Meriden Rod & Gun .....	6	19.50	4	15.00	12	45.00
New Haven Raccoon Hunter's Assoc. ...	12	39.00	5	18.75	20	75.00
Norwalk Raccoon Hunter's Assoc. ....	20	65.00	2	7.50		
Simsbury Coon Club .....	6	19.50			6	22.50
Torrington Fish & Game Club .....	8	26.00	2	7.50	10	37.50
United Raccoon Hunters .....	20	65.00	8	30.00		
Watertown Fish & Game .....	10	32.50			10	37.50
White Hills Coon Club .....			11	41.25	8	30.00
	91	\$295.75	62	\$232.50	80	\$300.00
	Average Cost \$3.45		Average Cost \$3.75			
Total Liberations—Cooperative, 153; Regular State, 16; Total 169					Cooperative—80 Regular State, 3; Total 83	
Total Cost to the Department	\$232.50			\$322.50		

## Deer

The number of deer killed appears to fluctuate, probably with the size of the herd, while the number of persons obtaining permits to hunt them continues to increase. In 1942 permits were issued to 1191 landowners and others entitled to take more than one deer at any time and 1006 additional permits were issued under which one deer could be taken during December 1942 and January 1943. The kill of these 2197 permittees was 483 deer. In 1943 landowners and others were issued 1433 permits and 987 were issued for December 1943 and January 1944, a total of 2420 permittees who reported a total kill of 394 deer.

The known kill from all causes by Warden Districts is given in Table XIII. Kills from all causes except by permit holders (130 in 1942, 121 in 1943) bears out the supposition that the herd was somewhat smaller in 1943 than in 1942.

## State Regulated Hunting

This Department has long faced the necessity of providing a place for sportsmen to hunt and fish in addition to its duties in enforcing the law and maintaining the supply of fish and game. Regulations

**TABLE XII**  
**RACCOON LIBERATIONS BY TOWNS BY DISTRICTS**

		1942	1943
District I	Goshen .....	4	..
	New Milford .....	5	7
	Prospect .....	2	..
	Southbury .....	..	2
	Torrington .....	9	10
	Watertown .....	13	8
	Woodbury .....	..	3
		33	30
District II	Simsbury .....	9	6
	Southington .....	4	..
	Wolcott .....	3	..
		16	6
District III	Bethany .....	..	3
	Cheshire .....	2	..
	Clinton .....	4	3
	Durham .....	..	4
	Guilford .....	1	4
	Killingworth .....	2	2
	Madison .....	2	2
	Meriden .....	6	12
	Middletown .....	6	..
	Wallingford .....	2	..
Woodbridge .....	4	2	
		29	32
District IV	Brookfield .....	5	..
	Monroe .....	3	..
	Redding .....	13	..
	Shelton .....	12	8
	Trumbull .....	2	..
	Weston .....	8	..
	Wilton .....	4	..
		47	8
District V	Andover .....	..	2
	Coventry .....	..	5
	Manchester .....	4	..
		4	7
District VI	Thompson .....	4	..
District VII	Griswold .....	7	..
	Norwich .....	4	..
	Sprague .....	3	..
	Stonington .....	3	..
		17	0
District VIII	East Hampton .....	5	..
	East Lyme .....	6	..
	Lyme .....	2	..
	Old Lyme .....	6	..
		19	0

**TABLE XIII**  
**REPORT OF DEER KILLED SHOWING CAUSE OF DEATH**  
**1942**

District	Permittee	Accident	Trains	Dogs	Autos	Found Injured	Unknown	Illegal	Total	Sex		
										Buck	Doe	Unknown
Litchfield .....	199		1	1	16	2	4	4	227	132	88	7
Hartford .....	17			1	7	2		3	30	13	14	3
New Haven .....	47	1	1	2	7		3	2	63	43	17	3
Fairfield .....	24			1	10	3	2		40	21	17	2
Tolland .....	54			2	5	1	4	3	69	40	28	1
Windham .....	71	2	1	1	9		4	7	95	55	39	1
New London .....	21			1	2	1		1	26	15	10	1
Middlesex .....	51	1	1	2	2	2	2	2	63	38	20	5
<b>TOTALS .....</b>	<b>484</b>	<b>4</b>	<b>4</b>	<b>11</b>	<b>58</b>	<b>11</b>	<b>19</b>	<b>22</b>	<b>613</b>	<b>357</b>	<b>233</b>	<b>23</b>

**REPORT OF DEER KILLED SHOWING CAUSE OF DEATH**  
**1943**

District	Permittee	Accident	Trains	Dogs	Autos	Found Injured	Unknown	Illegal	Total	Sex		
										Buck	Doe	Unknown
Litchfield .....	185				15	2	2	8	212	124	80	8
Hartford .....	12				2			2	16	7	9	
New Haven .....	33	1		1	7	2	2	5	51	32	18	1
Fairfield .....	44			4	5	3		5	61	39	20	2
Tolland .....	26			4	5	3		1	39	23	15	1
Windham .....	52				11	3	3	8	77	36	35	6
New London .....	17				2		1		20	11	9	
Middlesex .....	25	1		2	4	2	1	4	39	23	11	5
<b>TOTALS .....</b>	<b>394</b>	<b>2</b>		<b>11</b>	<b>51</b>	<b>15</b>	<b>9</b>	<b>33</b>	<b>515</b>	<b>295</b>	<b>197</b>	<b>23</b>

regarding the use of land which the State, by ownership, lease or agreement with the owner, provides as a place to hunt are safety measures. These regulations, conceived to prevent accidents and infringements on the rights of others, are as much a necessity and arise from the same causes as the need to provide places to hunt.

### Permit-Required Hunting Areas

These areas are the most numerous and extensive lands under regulation. The diversity of ownership and character of the land concerned continually present problems in administering them. The ideas underlying the permit-required area are certainly sound as demonstrated by their continued existence and the use made of them by sportsmen. At its last regular session the Legislature recognized the importance of these areas on which hunting privileges are acquired by agreement with the landowner, by including them with lands and waters acquired by gift, purchase or lease. A penalty in addition to revocation of hunting license was also provided for violation of regulations in force where such an agreement exists between the landowner and the Department.

The permits, from which these areas take their name, are a necessary part of the arrangements with landowners under which their land is opened to hunting. This system provides a check on the identity of strangers hunting on a farmer's land and is acceptable, at times helpful, to the sportsmen. The contact established by the permits between every hunter on these areas and the Department is an excellent and inexpensive source of information. This sample of the hunters and their bag on twenty-five or thirty areas, scattered throughout the State, can be used to the advantage of all in correcting stocking policies as well as estimating the value of management measures. Unfortunately some of the sportsmen do not realize the value of returned permits, particularly those men who are most interested in the areas, the landowners and members of sponsoring clubs. The figures for "game killed" in Table XIV and XV by season permit holders are probably from 40 to 60 percent too low due to the non-return of this class of permit.

Correcting the figures of pheasants bagged in tables XIV and XV for permits that were not returned indicates that between 7,000 and 8,000 pheasants were bagged on the permit-required areas during each of the two years. This estimated bag in 1943 is larger than for 1942. The per area bag is smaller, however, since an additional seven areas are included in 1943 which is reasonable since that season is known to have been less successful. It was not as bad as the reported kill would indicate however, since the reduction in the number of permits returned more than offsets the figures from the additional areas.

One other item of interest from permits returned is given in Table XVI, this is a comparison of the kill reported by season and daily permit holders. Again the figures given have not been corrected for permits that were not returned. Since the greater number

**TABLE XIV**  
**REPORT ON PERMIT-REQUIRED HUNTING**  
**SEASON OF 1942**

**Twenty-Four Areas—133,400 Acres**

Pheasants Liberated			Cocks	Hens	Total	
Spring .....			467	1,667	2,134	
August .....			750	1,799	2,549	
During Season .....			4,611		4,611	
Post Season .....				1,077	1,077	
<b>Total</b> .....			<b>5,828</b>	<b>4,543</b>	<b>10,371</b>	
						Total
	Season Permits	Oct.	Daily Permits		Total	Season and Daily Permits
			Nov.	Dec.		
Permits Issued .....	3,136	2,153	1,872	336	4,361	7,497
Permits Returned ..	2,064	1,910	1,635	287	3,832	5,896
% Returned .....	65.8	88.7	87.3	85.4	87.9	78.6
<b>GAME KILLED</b>						
Pheasants .....	4,300	385	241	9	635	4,935
Grouse .....	1,326	92	50		142	1,468
Quail .....	94		2		2	96
Woodcock .....	554	62			62	616
Ducks .....	612	26	12	22	60	672
Squirrels .....	5,522	939	305		1,244	6,766
Rabbits .....	5,933		576	116	692	6,625
Hares .....	7					7
Raccoon .....	10	1			1	11
Fox .....	107	2	3		5	112
Crow .....	153	14			14	167
Owl .....	2					2
Hawk .....	5					5
Predators .....	108	7	1		8	116
Miscellaneous .....	77	1			1	78

**TABLE XV**  
**REPORT ON PERMIT-REQUIRED HUNTING**  
**SEASON OF 1943**

**Thirty-One Areas—168,900 Acres**

Pheasants Liberated			Cocks	Hens	Total		
Spring .....			875	3,805	4,680		
During Season .....			6,636		6,636		
Post Season .....				1,980	1,980		
<b>Total</b> .....			<b>7,511</b>	<b>5,785</b>	<b>13,296</b>		
						Total	
	Season Permits	Oct.	Daily Permits		Jan.	Total	Season and Daily Permits
			Nov.	Dec.			
Permits Issued .....	3,067	1,628	1,606	366	62	3,662	6,729
Permits Returned .....	1,124	1,197	1,296	239	0	2,732	3,856
% Returned .....	36.6	75.5	80.7	65.3	0	74.6	57.3
<b>GAME KILLED</b>							
Pheasants .....	2,689	331	229	35	..	595	3,284
Grouse .....	595	39	80	..	..	119	714
Quail .....	182	..	4	..	..	4	106
Woodcock .....	418	49	..	..	..	49	467
Ducks .....	498	32	32	12	..	76	575
Squirrels .....	1,966	298	235	..	..	533	2,499
Rabbits .....	1,538	..	218	93	..	311	1,849

TABLE XVI  
COMPARISON OF TAKE BY DAILY AND SEASON PERMITTEES

Species	Total Reported Kill	1942 SEASON				1943 SEASON				
		<i>Daily Permits</i>		<i>Season Permits</i>		<i>Daily Permits</i>		<i>Season Permits</i>		
		No. Killed	% of Total	No. Killed	% of Total	Total Reported Kill	No. Killed	% of Total	No. Killed	% of Total
Pheasants .....	4,935	635	12.9	4,300	87.1	3,284	595	18.1	2,689	81.9
Grouse .....	1,468	142	9.7	1,326	90.3	714	119	16.7	595	83.3
Woodcock .....	616	62	10.1	554	89.9	467	49	10.5	418	89.5
Ducks .....	672	60	8.9	612	91.1	575	76	13.2	499	86.8
Squirrels .....	6,766	1,244	18.4	5,522	81.6	2,499	533	21.3	1,966	78.8
Rabbits .....	6,625	692	10.4	5,933	89.6	1,849	311	16.8	1,538	83.2
Total .....	21,082	2,835	13.45	18,247	86.55	9,388	1,683	17.9	7,705	82.1

of these are by season permit holders correction will increase the difference between the kills. Less than 10% of the pheasants bagged on these permit-required areas appear to be taken by holders of daily permits.

The work that has been done in organizing the Permit-Required Hunting Areas by local sportsmen's clubs accounts for the existence of many of the areas. Interest has not stopped with the organization of the areas but continues in the administration of them and in management practices which improve conditions for game. The scope of this report is not sufficient to include all the efforts of local sportsmen and landowners in improving these areas, in cooperation with the Department and on their own initiative. Improvement of food and cover conditions by the planting of woody plants, evergreens for winter and escape cover, and shrubs and trees that furnish fruits which are excellent wildlife foods, has become a major activity of the Woodbury Rod & Gun Club. Planting stock of evergreen trees for this work were obtained from the Forestry Department and food bearing trees and shrubs from commercial nurseries and from stock grown by the Warden Service for departmental use. This Department has assumed half of the cost of some of the stock planted by the club in the spring of 1943 and 1944, as an experimental program. The following have been planted under this arrangement: Norway Spruce, 5,000; Hemlock, 2,000; Red-Berried Nighthshade, 375; Hybrid Chestnut, 250.

The time, effort and money expended by members of sportsmen's clubs, in raising pheasants for release from day-old pheasant chicks supplied by the Department, are adding directly to the number of birds in the field. During the past two years, four clubs have released about 1600 pheasants raised from day-old chicks. In doing this the Enfield Hunter's Club and the Glastonbury Sportsmen's Club have raised about 64% of the chicks they received while the Hamden Fish and Game Club and the Windsor Division of the Connecticut Sportsmen's Association have each raised more than 60% of the chicks furnished them.

Another example of cooperation by landowners, club members and permit holders with the Department is the information and help furnished field workers on Pittman-Robertson Project 4-R. This experimental project is carried on in the eastern half of the Town of Wallingford, largely on land included in the Permit-Required Area, and requires, on the part of the hunters, respect for posted areas and information as to kill and hours spent hunting. This cooperation has been received to a gratifying degree.

### Waterfowl

The necessity for providing places to hunt has not been as evident for the duck hunter as the upland hunter. In the past it has been obscured by the more pressing need of reversing the trend of the duck population from a downward one to an upward one. Men-

TABLE XVII

## SEASONS, BAG AND POSSESSION LIMITS FROM FEDERAL REGULATIONS ON WATERFOWL

Year	Open Season Dates	No. Days	Daily Bag Limit	Possession Limit	Species Receiving Complete Protection
1915 and before	Always open	365	No limit.	No limit.	None.
1916	Oct. 1-Jan. 15	107	No limit.	No limit.	None.
1918	Oct. 1-Jan. 15	107	25 ducks, 8 geese, 8 brant	No limit.	Woodduck, Eider Duck, Swan.
1930	Oct. 1-Jan. 15	107	15 ducks, 4 geese, 4 brant.	Two days bag limit.	As above.
1931	Nov. 1-Nov. 30	30	15 ducks. 4 geese and brant combined.	As above.	As above and Ross, Snow, Cackling Geese and Brant.
1932	Oct. 16-Dec. 5	61	15 ducks, not more than 10 in the aggregate of canvasback, redhead, greater scaup, lesser scaup, ringneck duck, teal, gadwall, shoveler. Not more than 5 eider duck may be taken. Not more than 4 geese in the aggregate may be taken.	As above.	As above except Eider duck may be taken and Ruddy Duck and Bufflehead may not.
1933	Oct. 16-Dec. 5	61	As above except that limit now 12 ducks, not more than 8 of the species mentioned.	As above.	As above except that Cackling Geese may be taken.
1934	Oct. 18-Dec. 22 Friday & Saturday only	30	As above except that 5 of the species mentioned.	As above.	As above.
1935	Oct. 21-Nov. 19	30	10 ducks in the aggregate of all species; 4 geese in the aggregate.	Daily bag limit.	As above.
1936	Nov. 1-Nov. 30	30	As above.	As above.	As above and Canvasback and Redhead.
1937	Nov. 1-Nov. 30	30	As above, 5 geese in the aggregate.	As above.	As above.
1938	Oct. 15-Nov. 28	45	10 ducks of which not more than 3 of any one, or more than 3 in the aggregate may be redhead, bufflehead, canvasback, ruddy duck. Not more than 5 geese in the aggregate.	Two days bag limit.	Woodduck, Ross, Snow Geese, Brant Swan.
1939	Oct. 22-Dec. 5	45	As above except 4 geese.	As above.	As above.
1940	Oct. 16-Dec. 14	60	As above except 3 geese.	As above.	As above.
1941	Oct. 16-Dec. 14	60	10 ducks of which not more than 3 of any one, or in the aggregate may be redhead, bufflehead. 1 woodduck was legal in the aggregate bag in 15 states (of which Conn. was not one). 3 geese and brant in the aggregate.	As above.	Woodduck, Ross, Snow Geese, Swan.
1942	Oct. 15-Dec. 23	70	As above and 1 woodduck may be included in the aggregate. 2 geese or brant and an additional 4 blue geese or a total bag of 6 blue geese.	As above but not over 6 blue geese, 1 woodduck.	Ross and Snow Geese, Swan.
1943	Oct. 15-Dec. 23	70	As above.	As above.	As above.

tion will be made of only four areas that have been opened to the duck hunter since these are the only ones on which satisfactory estimates of success are available. The use of part of the Hammonasset State Park as a site for blinds for duck shooting was interrupted by the war. When reopened for the 1943 season on a part-time basis the use of these blinds and the kill from them was less than normal. From the returned permits that had been obtained to use the blinds the following record was taken: thirty-three hunters used the area taking 50 ducks, an average of about 1.5 duck per hunter. On opening day each hunter averaged 4.5 ducks and on the best day 6 ducks per hunter were taken.

The other areas for which records are available are parts of Lord's Cove, Great Island, and Ragged Rock Creek, which are State-owned. A patrolman was employed to cover these areas during the 1943 season and from his reports the following information was obtained: (1) At Lord's Cove 128 hunters were checked with 231 ducks, an average of 1.8 per hunter. On opening day each hunter averaged about 1.6 ducks and on the best day 6 ducks per hunter were bagged. Nine species of ducks were checked in the bags during the season. (2) At Great Island 166 hunters with 246 ducks, an average of about 1.5 per hunter, were checked. On opening day the average was about 1.4 ducks and on the best day about 6.8 ducks per hunter. Ten species of ducks were checked during the season. (3) At Ragged Rock Creek 54 hunters bagged 136 ducks, an average of about 2.5 per hunter. On opening day the average was about 3.6 and on the best day about 7.7 per hunter. Five species made up the birds checked.

The Federal Regulations, which supersede State Laws regarding the migratory birds have changed somewhat each year since 1930. A tabulation of the open seasons, and bag and possession limits for waterfowl is given herewith. These are qualified by numerous special regulations. In 1916 the Migratory Bird Treaty with Canada was signed and in 1918 the regulations prohibited the sale of waterfowl, thus ending the legal hunting of ducks and geese for sale. In that year also, the use of a gun larger than 10 gauge or of boats propelled other than by hand was prohibited. In 1932 hunting was permitted from one-half hour before sunrise to sunset. In 1933 this remained the same except that on the opening day hunting was not permitted until noon. In 1934 hunting was permitted from sunrise to sunset with the noon opening on the first day eliminated. In this year a Federal Duck Stamp was first required to hunt migratory waterfowl. This method of raising funds to finance Federal refuges and other activities is still in force at one dollar each for the stamps. In 1935 considerably more comprehensive regulations as to the methods by which waterfowl could be taken were set up. These were: (1) Waterfowl may be hunted with shotgun only, not larger than 10 gauge, fired from the shoulder but they shall not be taken with or by means of any automatic-loading or hand-operated repeating shotgun capable of holding more than three shells the magazines of which have not been cut off, or plugged with a 1-piece metal or wooden filler

incapable of removal through the loading end thereof, so as to reduce the capacity of said guns to not more than three shells at one loading. (2) Waterfowl may be hunted only from 7 A.M. to 4 P.M. standard time, during the open season. (3) Blinds or floating craft of any kind may not be used more than 100 feet from the shore line as determined by ordinary high tide or from the natural vegetation visible above the surface of the water at the time of shooting. Scoters may be taken in coastal waters without reference to such distance limitation. (4) Shooting over baited land or water prohibited. (5) The use of live decoys prohibited. (6) The use of sinkboxes, batteries or sneak boats prohibited. In 1935 the special regulations remained the same as during the previous year except that number 3 above was eliminated. The next change was made in 1939 when hunting with bow and arrow was included. In 1940 regulation 2 of 1935 was changed to allow hunting from sunrise to 4 P.M. In 1941 the only change was to add the taking of waterfowl by means, aid or use of cattle, horses or mules to the methods of taking which had been prohibited. In 1942 the regulations were changed to allow waterfowl to be shot from sunrise to sunset, and in 1943 from a half hour before sunrise to sunset.

The period of time during which the possession limit could be kept was originally 10 days after the close of the season, in 1940 this was changed to 20 days, in 1942 to 30 days and in 1943 to 45 days.

### Pittman-Robertson Program

Appropriations of Federal funds for this cooperative program to improve conditions for game are the lowest since the original appropriation in 1938, \$1,000,000 for the fiscal year 1943-1944 and \$900,000 for the year 1944-1945. Connecticut's share in the first of these years was \$2,671.65, the allocation for the current fiscal year is \$2,538.83.

The kind of information sought through Pittman-Robertson projects is the kind that is needed in carrying on the activities of the Game Division with reduced personnel and in planning the post-war work. A very real need will exist after the war for the expenditure of considerable time and effort on game work that has necessarily been neglected. Findings from current Pittman-Robertson projects, if they can be continued, may lead to considerably increased effectiveness and efficiency in this work.

Our best information is that there is no foundation for the hope, expressed by some, that the war period with the reduction in hunters and hunting will allow game to increase. On the Wallingford project the pheasant population during the winter of 1943-1944 showed no increase over previous years. For the State as a whole the records of permit returns show that about 20% of the hunters take all of the pheasants killed. Much the same is probably true for other species of game. Until the number of hunters and the time hunted are so far reduced as to cut into the skillful and fortunate third of the license

holders who bag at least 90% of the game, the annual kill will not go down. With annual losses at pre-war levels, if not in numbers at least in the percent of the population taken, and stocking and the benefits of management reduced, the need of maximum results from the work that can be done is clear.

Two projects have been carried on during the biennium. Project 4-R, Seed Stock Refuge Investigation, in which pheasant and associated farm game in the eastern half of the Town of Wallingford are watched, is testing two types of habitat improvement, food patches and small refuge areas. The plantings of corn and buckwheat have shown their value in holding stocked birds liberated in or near them and in the use made of them by pheasants. The small refuges have not shown conclusively their value in retaining larger populations through the hunting season. Estimates of the value of the work have been complicated by the poor breeding season of 1943 and the drought during that summer and early fall, as well as by changes in hunting pressure and project personnel. It appears certain that management of the intensity practiced at Wallingford will not prevent the effect of a poor breeding season from being apparent on managed areas as well as on unmanaged ones. How much less serious a poor year is on areas under management, and whether they recover better has yet to be determined.

Project 1-R, Ruffed Grouse Investigation utilizes 2,000 acres in two State Forests, Cockaponset in the town of Haddam and Tunxis in East Hartland. On each of these forests grouse census lines have been laid out on two areas of about 500 acres each. These areas were similar when the work was started but one of them has been treated to improve conditions for grouse while the other is untouched. Population estimates on the two areas are compared to judge the effectiveness of the work. Direct results of the work are also judged by samples of the insect populations and the vegetation present on treated and untreated plots. In the development work four requisites of grouse habitat have been supplied as a unit, close enough together to be used by a single bird or family group. Each unit consists of an area which provides fall food, winter cover, brood cover, and undisturbed woodland. One such unit for each forty acres of the 500 acres developed has been established with the units as evenly distributed as conditions will allow. Where food bearing shrubs have been liberated from competing growth to provide larger crops of fruit or where evergreens have been released to develop for winter cover, success can be determined by examinations of the areas. Where trees and shrubs have been removed to foster herbaceous vegetation that will support a large insect population as food for grouse chicks the increase in insects is determined by collecting samples on the plots so treated and on adjacent untreated areas.

The work to date shows excellent results. Food shrub liberations are successful in producing more fruit on the plants released. Shrubs that are present when the work is done send up additional

shoots and spread out, but new species or individuals are slow to enter the openings and bear fruit. Except for one opening one year, all openings that were intended to increase the insects available to grouse chicks have been found to have an insect population greater than surrounding untreated areas. These samples of the insect populations were taken during the period when the young birds were of an age, from hatching to six or eight weeks, when insect food is essential. Naturally, sprouts, seedling, and undesirable shrubs tend to occupy all of the openings made in this work. Information is being obtained as to the way in which the desired results increase for a year or two after the work is done and then decline. This same data is being obtained for areas on which regular forest operations such as planting, are being carried on. From this work, a knowledge of the more satisfactory methods of improving grouse habitat can be obtained. It is expected that a management program, following the experimental work now being done, would be given permanence by repetition, in conjunction with regular forest work.

Due to the rather sparse population of grouse in Connecticut and limitations imposed on the project by lack of funds and personnel, the number of observations of grouse on the study areas each year is small. The results of the work cannot, therefore, be judged on the basis of one year's observations. Definite conclusions must be based on large numbers of individual cases. From direct observations of grouse broods to date, it seems certain that the conditions produced by the openings are attractive. The openings occupy only a small percent of the study area but since they have been made, a considerable percentage of the broods have been seen in them. Additional time will be required to demonstrate whether this indicates merely a shift in the population or the increase which is desired.

### Litchfield-Morris Sanctuary

Through the generosity of Alain C. White and his sister, Miss Mary W. White the income from trust funds known as the White Memorial Foundation Fund and the John Jay White, Jr. Memorial Fund, is used to maintain a game program at the Litchfield-Morris Sanctuary.

This area consists of approximately 4,000 acres of woodland located in the towns of Litchfield and Morris containing several small ponds and an extensive frontage on Bantam Lake.

Since 1940 the principle activity carried on at the sanctuary has dealt with research aimed at the improvement of methods in wildlife management.

**Ruffed grouse management studies.** A 760-acre study area, divided into 40-acre blocks by blazed trails, has been utilized for checking grouse populations and as a grid on which field observations are made and accurately located.

In addition to the regular spring and fall censuses, a check on the number of drumming male grouse was obtained during the spring of 1944.

Through an accumulation of large numbers of field observations, it is hoped that definite conclusions may be drawn as to what composition and arrangement of cover types are most suitable as seasonal grouse habitat and how such cover may be provided and maintained.

Studies bearing on the use of planted food shrubs have been initiated. Quarter and half-acre food plots have been established by the release of such food species as apple, grape, cherry, dogwoods and viburnums. Supplemental plantings were made of "Bob White" crab apple, Mt. ash, bittersweet, and Japanese barberry where natural foods were deficient. A nursery containing an additional supply of the above species has been established to provide material for future plantings.

Preliminary work has been completed on a method of Cover-Mapping designed to locate and describe the occurrence of vegetative species on upland types. This method will include information on the ground-cover, undergrowth, and overstory. It is hoped that a map of this type, together with factual information concerning habitat preference, will be the basis for planning environmental improvements over large areas.

**Pheasant-management.** Due to the fact that favorable pheasant cover occupies only a small area on the sanctuary, management has been limited to the establishment of five small plots of buckwheat, wheat, and corn in the better pheasant coverts.

**Waterfowl management studies.** The ponds on the sanctuary are of considerable value as stop-over refuge areas for several species of migrating waterfowl. In addition there is a breeding population of mallard, black duck, wood duck, and Canada geese. Approximately 150 mallards, 25 black ducks, and 60 Canada geese are fed at Bantam Lake during the winter months.

As an aid in overcoming the shortage of favorable nesting sites for wood duck, 75 nesting boxes were placed along the banks of ponds and streams throughout the sanctuary. These boxes are constructed of 1-inch white pine with inside dimensions of 10 x 10 x 24 inches and with a circular entrance 4 inches in diameter and 4 inches below the top of the box. There has been only limited use of these boxes by wood duck to date. A summary of the records taken between April and July 1944 shows the amount of use and the species using them: wood duck nests 3, grey squirrel leaf nests 14, grey squirrel litters 2, red squirrel nests 3, red squirrel litters 1, and flying squirrel nests 2. It is hoped that the boxes will be increasingly utilized as time goes on and that there will be a resulting increase in wood duck on the sanctuary. Information obtained by periodical inspections of the

boxes is of value in studying the food habits, nesting habits, ecology, and population fluctuations of the several species of birds and mammals using them.

To further increase the attractiveness of the ponds to waterfowl, plantings of wild millet, large-seed smartweed, and rice cut-grass have been made in suitable locations along the margins. These three species were rated near the top in a recent survey on duck food by Bellrose and Anderson (Preferential Rating of Duck Food Plants—Illinois Natural History Survey) and their production of food and use by wildlife will be studied to determine their effectiveness in this locality.

**TABLE XVIII**  
**PRIVATE SHOOTING PRESERVES UNDER STATE REGULATION**

	1942-1943 Season	1943-1944 Season
Number of Preserves in Operation .....	11	12
Number Operating During Regular Season ....	1	1
Number Operating During Extended Season ...	10	11
Total Acreage .....	6,661	7,289
Total Reported Pheasant Liberation .....	5,475	4,995
Total Reported Pheasant Kill .....	2,594	2,494
Percentage of Kill of Number Liberated .....	47.4%	49.9%

**TABLE XIX**  
**FIELD TRIAL PERMITS ISSUED IN 1942 AND 1943**

	1942	1943
Bird Dog Trials .....	41	16
Coon Dog Trials .....	27	7
Combination Coon and Fox Dog Trials .....	6	
Beagle Trials .....	1	
Rabbit Dog Trials .....	1	
Pigeon Trials .....	7	2
Totals .....	83	25

**Museum collection.** A collection of ferns, and flowering plants native to the sanctuary has been completed, and a report describing the collection and listing the species found is being prepared for publication by Dr. John Dwyer of Union College, Albany, N. Y., who made the collection. Approximately 950 species have been mounted and stored at the sanctuary for reference.

Study skins of birds and mammals totaling 115 specimens have been collected and stored for reference and identification purposes.

A collection of ruffed grouse and pheasant foods has been started and now contains 64 items, 47 seeds, 5 catkins, and 12 buds.

A two-car brick garage has been converted into a laboratory and storage space for specimens.

### Private Shooting Preserves

The number of private shooting preserves operated during the biennium is about half the number during the previous two years. The average number of pheasants liberated on the preserves in operation remains about the same, having been about 500 birds for the four years. The percent of these birds that are taken by hunters also remains about the same, averaging approximately 46% during 1940 and 1941, about 49% during the last two years.

### Field Trials

The regulations under which trials of hunting dogs may be made in the field are administered by the Department and permits issued for field trials. A tabulation of the field trial permits issued during the biennium is given in Table XIX.

The need for an area suitable for holding some of these trials led to the leasing of an area of about 285 acres, known as Pelton's Pasture, in the town of East Windsor. The lease on this area, which is primarily for field trial use, is renewed annually. Birds liberated at trials there are taken by hunters in surrounding areas under regulation or remain on the refuge to furnish a native population which spreads out into territory open to hunting. During 1942 the Department furnished 432 pheasants and in 1943, 250 birds as its share of cooperative liberation by field trial clubs.

### Connecticut Game Breeders

The number of licensed game breeders in the State has decreased each year since 1939. Less than half of the persons that obtained breeders licenses reported raising game during the last two years. In 1942 there were 101 breeders of mink and 138 of pheasants that raised these species for sale. In 1943 there were 77 mink and 106 pheasant breeders raising these species for sale. These two classes of breeders make up about 45% of the licenses issued and the reduction in these licenses amounted to 23% in that one year. Table XX shows a reduction in all game breeders licenses from 510 to 426 which is 84 or about 16%. Apparently war conditions have accelerated the decrease in the number of licensed breeders.

In the spring of 1942 in response to requests for bids to furnish pheasants to the Department 29 breeders offered birds in the following numbers at the prices given:

For delivery in August, 1942 .....	5,953 pheasants @ \$1.64
For delivery in fall of 1942 .....	11,045 pheasants @ 2.21
For delivery in spring 1943 .....	8,498 pheasants @ 2.98

In the spring of 1943 requests for birds brought offers from 22 breeders as follows:

For delivery in fall of 1943 .....	11,466 pheasants @ \$3.18
For delivery in spring of 1944 .....	5,873 pheasants @ 3.38

The range in the price asked for birds in the spring of 1942 was from \$1.45 to \$3.25 and in the spring of 1943 from \$2.00 to \$4.50.

**TABLE XX**  
**TABULATION OF GAME BREEDERS REPORTS**

	1942	1943
Number of game-breeders licenses issued .....	510	426
Number of breeders that reported raising game .....	251	200
Birds reported raised		
Game pheasants .....	51,046	22,659
Fancy pheasants .....	45	82
Quail .....	5,101	2,804
Ducks and Geese .....	1,919	566
Miscellaneous species, chuckers, swans, doves, wild turkeys and cranes .....	72	28
Animals reported raised		
Mink .....	5,076	3,578
Fox .....	543	121
Raccoon .....	126	88
Muskrat .....	43	9
Miscellaneous species, deer .....	9	17
Game pheasants sold to the Department .....	21,961	16,545
Game pheasants reported as sold outside of the State .....	5,674	2,669

### Bounty Payments

Present state laws provide (Sec. 109g, 1943 Supplement) that any town may pay a bounty of not more than \$5.00 for foxes, rattlesnakes or copperheads and (Sec. 55f, 1941 Supplement) shall pay a bounty of \$5.00 for bobcat or lynx. Any town may pay a bounty of not more than \$1.00 for weasel, woodchuck or wild European hares.

A request was sent to the town clerk of every town in the State for information regarding bounty payments during the year 1943. No reply was received from twenty-six towns, one hundred and twenty-four replied that no bounties had been paid and nineteen indicated bounty payments amounting to \$2,466. Of these nineteen, Simsbury in Hartford County paid bounty on 1 wildcat, Winchester and Torrington in Litchfield County paid bounties on 2 wildcats each and these three towns paid no other bounties. Ledyard in New London County paid a bounty on 1 wildcat and in addition paid bounties on foxes. Morris and Sharon in Litchfield County paid bounties respectively on 50 wild Belgian hare at \$1.00 each and 2 rattlesnakes at \$1.00 each. The balance of the bounty payments were for foxes as follows:

Fairfield County		New London County	
Stamford .....	1 @ \$2.00	Colchester .....	66 @ \$5.00
Windham County		Lebanon .....	61 @ 1.00
Ashford .....	82 @ \$2.00	Ledyard .....	34 @ 3.00
Middlesex County		Lyme .....	11 @ 5.00
Clinton .....	24 @ \$2.00	North Stonington .....	30 @ 3.00
Essex .....	1 @ 4.00	Norwich .....	168 @ 5.00
	6 @ 5.00	Old Lyme .....	110 @ 2.00
		Preston .....	29 @ 3.00
		Sprague .....	22 @ 2.00
		Stonington .....	4 @ 1.00
			2 @ 3.00
			99 @ 3.00

In cases where bounty payments were made for two different amounts it is to be assumed that the town pays a different amount for male and female or for young and mature foxes.

The history of established bounty systems for the control of dangerous or destructive animals is well known. The bounty apparently does not increase the take over what it would be without these payments. Abuses commonly arise and the damage done by destructive species is rarely alleviated by such payments.

TABLE XXI

## PERMITS ISSUED TO TRAP STATE LAND AND FUR TAKEN

	1942-1943	1943-1944
Number Permits Issued .....	38	55
Bobcat .....	1	0
Mink .....	46	89
Weasel .....	55	142
Fox		
Grey .....	4	11
Red .....	9	44
Not Stated .....	152	160
Skunk .....	259	403
Muskrat .....	1,055	1,478

## **Fish Restoration**

### **Trout Restoration**

The stocking of legal size trout continues to be the principal feature of the trout restoration program. For the biennium, 156,804 legal size trout and 9,694 fingerling lake trout were purchased from commercial hatcheries to supplement the trout raised in our own hatcheries. The number of legal size trout delivered in the spring of 1944 fell below the number ordered, due to the shortage of foods and labor.

While the fish food situation has been very uncertain, we have been fortunate in securing a supply of foods to take care of our needs.

During the two years our holding plans have been changed. We are increasing the number of one year brown trout being held for distribution as legal size trout.

### **Plant Improvements and New Equipment**

A new roof was installed on Burlington Hatchery and additional land has been purchased at Burlington and Windsor Locks Hatcheries, which provides added protection to the water supplies. Fifty per cent of the hatching troughs have been replaced at Burlington and Windsor Locks Hatcheries.

Plans are now being completed for a new pool 100 feet by 40 feet and installation of asbestos siding on the hatchery building at Burlington, and installation of new sills and asbestos siding on the hatchery and construction of a new dam and water system at Windsor Locks Hatchery. The installation of asbestos siding on the Windsor Locks residence was completed in 1943.

Preliminary plans have been made to increase the water supply at Burlington and Kensington Hatcheries.

The flow of a spring at Lakeville is being recorded to determine if the volume is sufficient to operate a rearing plant. Reports on analysis of the water seem to be satisfactory.

### **Pond Fish**

During the biennium the policy of rearing, salvage and purchase of pond fish has been continued. Connecticut River commercial fishermen continue to furnish the fish purchased by the Department.

After a three-year interval, Bog Meadow Reservoir in Norwich, under management by the Department through an agreement with the City of Norwich and the Norwich Fish and Game Club, was drawn down in the fall of 1943. It produced a considerable number of bullheads, yellow perch, calico bass and golden shiners.

One of the rearing ponds in which 153 adult pickerel were placed as breeders produced 3,000 fingerling and adult fish over a period of three years. These pickerel were distributed to various lakes and ponds in the State.

### **Bass Fry**

The Department, in cooperation with the United States Fish and Wildlife Service, released 227,000 bass fry in 1943 and 15,000 in 1944. Selected bass ponds in the State were allotted portions of the fry. Bass fingerlings from the Federal Hatchery, at Arcadia, Rhode Island were also released in the ponds of the State.

### **Pond Survey**

The Lake and Pond Survey Unit has been discontinued during the past biennium due to lack of personnel. The work done in 1940 and 1941 has not yet been published. The manuscript is ready for publication and will be issued as soon as possible.

### **Shad**

The run of shad in the Connecticut River during the 1943-1944 seasons compares favorably with that of previous seasons in quantity.

Conditions on the Salmon River apparently do not improve, as few reports of shad in this stream have been received.

Angling for shad in the Eight Mile River was not as satisfactory as in previous years, due principally to prevailing low water conditions during the shad run.

The Connecticut River at Enfield Dam provided the most sport for the shad angler with light tackle.

### **Lobsters**

The rearing of lobsters to the fourth or diving stage has been continued at the Marine Hatchery at Noank under difficult conditions due to lack of personnel.

During the biennium, more than one-half million of the fourth stage crustaceans have been liberated along the Connecticut coast from Stonington to Rowayton. The female lobsters, after depositing the young lobsters in the hatching troughs, were returned to approximately the same sections of Long Island Sound and Fishers Island Sound from which they were taken.

The Department has continued the purchase, identification, marking and release of green egg-bearing lobsters as in previous seasons.

### **Marine Fisheries Compact**

Legislation to authorize participation by Connecticut in the Atlantic States Marine Fisheries Commission will be submitted to

the Assembly this year. The Atlantic coast states with the exception of Connecticut, North Carolina and Florida are now members of the Commission. The provisions of the Compact were outlined in the twenty-fourth biennial report. The assessment to the State for membership is now \$500 per year. This Board recommends that the Marine Fisheries Compact be adopted by the General Assembly at its present session.

### **Cooperation with the U. S. Fish & Wildlife Service—Milford Shellfish Laboratory**

A grant was allocated from the General Fund appropriation for Fish and Game to permit Dr. V. L. Loosanoff, in charge of the Milford Laboratory to continue his valuable work on the biology of commercial mollusks in Long Island Sound. Wartime difficulties had made it impossible to provide assistants at the Laboratory during the latter half of 1943. Through the cooperation of the State Personnel Department the necessary appointments were made.

The work of the Laboratory during this period included observations on the dates and intensity of oyster setting, the effect of turbidity on oysters, study of edible mussels as a possible food source, and the study of starfish as a predator of oysters. The program of the station is now being continued with a staff provided by the U. S. Fish & Wildlife Service.

### **Commercial Fisheries**

Commercial fishing has been on the increase in production and income for the past two years. Lobster fishing has decreased since many of the regular men have gone into war work. A large number of part-time lobstermen have taken out licenses but do not have the gear or experience of the full-time men, so while the number in the lobster industry has increased, the catch has fallen off.

Owing to difficulties in collecting the catch records 1943 records are not available at this time. The reports indicate that the catch will be below that of 1942. Through verbal reports the run of lobsters for 1944 seems to be less than in 1943 or 1942.

There has been a decided increase in the catches of the otter trawlers landing in Connecticut. Some of this is due to new boats added to the fleet. All these new boats are over 60 feet in length and powered with Diesel motors of 100 h.p. or better and cost from \$20,000 to \$25,000 to place in commission. During the past two years eight of these vessels have been added to the fleet at Stonington. The port of Stonington has been averaging over 1,000,000 pounds of fish landed each month.

A new company in Stonington, the Blue Ribbon Fillet Company, buys fish on the docks and prepares them for market in the form of fillets. For the past year they have been very busy on government orders.

During July 1943, the O.P.A. placed a ceiling on the fish of New England and as a result the fishermen went on strike which reduced the catch for that month.

There has been a large run of striped bass for the past two years. Commercial fishermen during the year 1942 caught 18,269 pounds. This is the largest catch on record for Connecticut. It is reasonable to say that the sport fishermen have caught as many more, although no record of their catch is obtainable. Sport fishing on salt water has increased in spite of difficulties due to Federal regulations. This year seems to be a banner year all along Long Island Sound, with catches of weakfish, mackerel, porgies, bluefish and striped bass being made from Stonington to Stamford.

**Catch of Connecticut Fishermen As Reported By the Month  
For the Year 1942**

<i>Pounds</i>		<i>Value</i>		<i>Pounds</i>		<i>Value</i>	
<b>January</b>				<b>July</b>			
Lobsters	343	\$	100.37	Lobsters	106,000	\$	27,522.23
Fish	527,909		31,868.16	Fish	1,527,975		79,243.85
Shellfish	938		210.60	Shellfish	6,224		1,192.57
				Turtle (sea)	50		2.75
	529,190	\$	32,179.13		1,640,249	\$	107,961.40
<b>February</b>				<b>August</b>			
Lobsters	98	\$	29.40	Lobsters	89,521	\$	23,238.69
Fish	717,781		49,564.50	Fish	1,718,490		74,421.78
Shellfish	944		200.05	Shellfish	7,938		2,208.95
	718,823	\$	49,793.95		1,815,949	\$	99,869.42
<b>March</b>				<b>September</b>			
Lobsters	0	\$	0	Lobsters	44,831	\$	12,485.03
Fish	1,167,298		55,840.62	Fish	1,493,846		79,352.11
Shellfish	2,172		451.05	Shellfish	8,592		2,045.74
Seed Oysters	*36		21.60		1,547,269	\$	93,882.88
	1,169,470	\$	56,313.27				
	*36						
<b>April</b>				<b>October</b>			
Lobsters	8,742	\$	2,650.61	Lobsters	20,452	\$	5,705.58
Fish	1,289,732		41,773.52	Fish	1,400,606		61,262.68
Shellfish	1,944		481.30	Shellfish	9,063		2,612.98
	1,300,418	\$	44,905.43		1,430,121	\$	69,581.24
<b>May</b>				<b>November</b>			
Lobsters	28,516	\$	7,995.03	Lobsters	13,757	\$	3,825.00
Fish	1,083,914		43,105.02	Fish	947,692		48,952.29
Shellfish	2,863		442.91	Shellfish	3,341		665.60
	1,115,293	\$	51,542.96		964,790	\$	53,442.89
<b>June</b>				<b>December</b>			
Lobsters	50,541	\$	13,364.06	Lobsters	4,724	\$	1,473.26
Fish	1,716,121		64,915.15	Fish	578,771		42,626.21
Shellfish	6,167		719.95	Shellfish	1,332		292.85
Hermit Crabs	175		10.00		584,827	\$	44,392.32
	1,773,004	\$	79,009.16				

\*Bushels.

Report of Catch of Marine Fishes  
Calendar Year—1942

Lobsters .....	39,153 lbs.	\$11,667.59
Fish .....	344,711 "	19,345.34
Shellfish .....	20,985 "	4,185.35
Blue crabs .....	634 "	87.40
Sand worms .....	40 doz.	20.00
Seed oysters .....	2,500 bu.	2,000.00
Totals .....	405,483 lbs.	\$37,305.68
	40 doz.	
	2,500 bu.	

Report of Catch of Inland Fishes  
Calendar Year—1942

Fish .....	457,654 lbs.	\$30,618.53
Shellfish .....	2,899 "	400.50
Blue crabs .....	2,524 "	357.40
Totals .....	463,077 lbs.	\$31,376.43

Report of Shellfish Taken  
Calendar Year—1942

Shellfish .....	1,108,168 lbs.	\$180,423.45
Seed oysters .....	301,931 bu.	224,265.45
Oyster shell .....	91,884 "	10,107.24
Total .....		\$414,796.14

SUMMARY

Lobsters .....	406,678 lbs.	\$ 110,056.85
Flounders (blackbacks) .....	3,427,072 "	173,860.48
Yellowtails (dabs) .....	9,406,806 "	405,240.90
Fluke .....	156,970 "	22,096.31
Codfish .....	81,254 "	8,179.70
Porgies (scup) .....	827,198 "	45,270.03
Eels (common) .....	24,106 "	3,885.13
Butterfish .....	60,544 "	6,214.31
Shad .....	372,890 "	22,325.20
Striped bass .....	18,269 "	3,708.15
Other species of fish .....	597,391 "	32,109.55
Clams (soft) .....	33,410 "	6,425.71
Clams (hard) .....	40,083 "	10,001.35
Oysters (market) .....	1,069,463 "	171,512.80
Blue crabs .....	3,158 "	444.80
Hermit crabs .....	175 "	10.00
Winkles (conchs) .....	18,734 "	1,523.62
Scallops (bay) .....	2,771 "	893.00
Scallops (sea) .....	18,734 "	6,166.37
Mussels .....	143 "	11.00
Turtle (sea) .....	50 "	2.75
	16,565,899 lbs.	\$1,029,938.01
Seed oysters .....	304,467 bu.	226,287.05
Oyster shell .....	91,884 "	10,107.24
Sand worms .....	40 doz.	20.00
Total value of catch .....		\$1,266,352.30

## Studies at the Bingham Oceanographic Laboratory

Beginning in 1943 the State Board of Fisheries and Game and the Bingham Oceanographic Laboratory at Yale University began a cooperative study of certain aspects of the marine resources of the State. For several years it has become increasingly evident that a more thorough knowledge of these resources is necessary—a need which has been emphasized by the war and its demands upon all potential food supplies.

The investigations have two purposes. One, a response to the needs of the war emergency, is a search for new foodstuffs and other products. The other, from the viewpoint of the existing fishery, looks toward efficient future administration on the basis of demonstrated biological fact. Considerable progress has been made along both lines of work. Thus, studies of the Connecticut trawl fishery have yielded detailed information on the seasonal variation in numbers and poundage of each species, as well as the factors which underly these variations, e.g., age, composition and rate of growth of the important species, variations in sex ratio, migrations, early life history and food habits. Most of this data is still in preliminary form but is being completed as rapidly as limited funds and manpower permit.

It is fortunate for the Department to have an organization such as Bingham Laboratory, equipped and staffed to do this work, so close at hand. If the Department had attempted such a program independently, the cost would have been greater, and under present conditions, difficult to accomplish.

## The Connecticut Trawl Fishery

The Connecticut trawl fishery is based, for the greatest part, on two flounders, *Pseudopleuronectes americanus*, the winter flounder, and *Limanda ferruginea*, the yellowtail. Of these two principal species the winter flounder most consistently engages all sections of the fleet; therefore that species is being studied in considerable detail. Other important species are the cod, *Gadus morhua*, the porgy, *Stenotomus Chrysops*, the butterfish, *Poronotus triacanthus*, and in recent years the ocean pout, *Zoarces anguillar*. In addition to these there are 24 other species taken more or less regularly in the nets at various seasons, as well as a wide variety of stragglers.

An analysis of the catch of a boat chosen as being typical of the fleet showed that for the months of July through January the catch of all species averaged 812 pounds per hour. Of this poundage 36 per cent was regularly marketed and 31 per cent of an average haul consisted of the winter flounder. When certain conditions of the market coincided with the periods of abundance an additional 11 per cent of an average haul was marketed. The remaining 53 per cent was thrown overboard as soon as the desired fish were sorted out, and these are designated as "trash". Thus it is seen that slightly more of an average haul was discarded than was kept during the period of

analysis. All of these fish represent potential protein for human or other consumption. The common sculpin, *Myoxocephalus octodecimspinosus*, one of the trash fish, constituted 28 per cent of an average drag and is perfectly edible although it presents certain mechanical problems in its utilization. About 18 per cent of an average haul consisted of three species of skates. This fish is widely eaten in Europe but is almost universally discarded in this country. The trash species were heavily predominant in the fall months and these were also the months when the catches per hour were highest. Thus fuller utilization of these fish would tend to equalize the general economy of the fishery as well as render it more efficient.

### Fishes of the Shore Zone

A fishery does not necessarily begin and end on the fishing grounds. Rarely does a fish spend its entire life in one limited area. More frequently an adult caught in one place may spawn in an entirely different locality and the juvenile stages may be spent in yet another situation. Generally speaking the younger stages of life are spent in shallow water and this is especially true of the commercially important flounders. The shore-line is also important in that the smaller fishes resident there as adults are often significant food items for larger species that are much sought after, either for sport or commercially.

A study was made of the fishes of a section of shore near New Haven to determine how important the shore zone is in the general fish economy of Long Island Sound. Fish were collected at bi-weekly intervals for a period of a year and taken to the laboratory for analysis. During that period 16,525 fish were handled representing 32 species. Of these, 12 species are of commercial importance to Connecticut fishermen, three have definite possibilities, and four others are food for many other fish.

The shore zone is the nursery ground for the winter flounder which was the most important commercial fish residing there. The fishes inhabiting the zone are limited as to size. The resident adults, such as silversides and killifishes, seldom exceed four inches in length and the species that grow larger, including herring, menhaden, flounders and bluefish leave the area when they reach that size. The larger species seem to remain in shallow water until they reach a given size, regardless of age. If it should become necessary to conserve any of the important species, the shore zone would be considered as a nursery area.

### The Winter Flounder

In Long Island Sound, spawning of the winter flounder begins in November and continues until April. There are apparently two peaks of spawning activity, one in January and another in March, probably explicable on the basis of the two races of winter flounder known to live in these waters.

Approximately 3,000 winter flounders have been tagged and released in different parts of Long Island Sound. The returns (ap-

proximately 5 per cent) indicate a general east-west movement and an apparently fairly well defined segregation of the two races. It appears that a slow-growing race of flounders exists in the west end of the Sound during the winter months, and that a relatively fast-growing race of larger fish are found in the region of the mouth of the Sound at the same time. In the spring, both races move to the eastward, the larger fish in part giving up their place to the slower-growing race in May and June and migrating considerable distances off shore and in the direction of Martha's Vineyard. Correspondingly, in the late summer and early fall, a reverse migration occurs, the smaller fish moving to the west end of the Sound, and the faster-growing race returning, at least in part, to the general area of Block Island and its vicinity. The above is hypothesis based on preliminary and not yet fully analyzed data. A complete understanding of these factors in the fishery is essential to knowledge which enables full and rational utilization.

The fluctuations in abundance of the flounder are striking. The time of greatest abundance in the Long Island Sound region is from May through September.

### *Zoarces anguillaris*

The ocean pout, *Zoarces anguillaris*, has recently come on the market in large numbers. The presence of this fish in the trade is attributable to the wartime demand for food. Up until 1941 very few ocean pout were landed, but in 1943 4,000,000 pounds were sold and about the same amount in 1944. Connecticut fishermen and processors are active in this trade and the fish has assumed considerable importance to the State. It is most prevalent in the winter months when many other fish are less abundant, and so offers an opportunity for an equalization of the fishermen's effort. However, one difficulty which has arisen in connection with the marketability of the fish, is the fact that a protozoan parasite infects the flesh and renders inspection necessary. This problem has been attacked in great detail by the staff of the Bingham Laboratory. Not only has full information on the life history and habits of *Z. anguillaris* been accumulated by painstaking field and laboratory analysis, but also much data on the seasonal and geographical incidence of infection has been collected. Studies on this species have been extended from Southern New England waters all the way to Canada because of the importance of the problem. It is expected that a report on the ocean pout will be ready for press within the next few months.

### Other Investigations

The analysis of the Connecticut trawl fishery has resulted in the collection of a quantity of data. This material makes possible a dual attack on the problems of the fishery—first, the analysis of the population as a whole, and second, the studies of the life histories of the component species. Outstanding among the reports now in progress (beyond those already indicated) are the analysis of the Connecticut

trawl fishery on the basis of a full year's observations, and a study of the life-history and habits of *Scophthalmus aquesus*, the daylight flounder, a fish of considerable economic possibilities. Contemplated investigations, for which much of the essential data has already been accumulated, are the life-histories of the whiting, *Merluccius bilinearis*, skates, *Raja erinacea*, *diaphanes*, and *stabuliformis*, sculpin, *Myoxocephalus octodecimspinosus*, and the physical oceanography of Long Island Sound and its relationship to the distribution of the major planktonic elements.

Other researches include a cooperative study of the possibilities of the utilization of the starfish, *Asterias forbesi* (Desor), the results of which are now in press, and are of considerable significance to the oyster industry of the State and an investigation of the toxins associated with the ovaries of the puffer fish, *Spheroides Maculatus*, which is nearing completion. Analyses of fish livers of all the major species in the commercial trawl catch have been made. Although these studies have uncovered no immediate source of supply, they provide important information for the future and much data which may have eventual application.

Incidental work on problems which developed as the studies on marine resources progressed resulted in a number of minor contributions. While these may have no immediate practical application they add to our general knowledge of the Connecticut fauna.

Reports which are already in print or now in the process of being published are listed below. These, as well as others which are in progress or are contemplated for the future, may be obtained upon request as soon as available by writing the Director of the Bingham Oceanographic Laboratory, Yale University, New Haven, Connecticut.

**Tetrodon Poisoning**, by Warren H. Yudkin.

**A Preliminary Analysis of the Connecticut Trawl Fishery**, by Daniel Merriman and Herbert E. Warfel.

**An Analysis of the Fish Population of the Shore Zone**, by Herbert E. Warfel and Daniel Merriman.

**The Possibility of the Utilization of the Starfish (*Asterias forbesi* Desor)**, composite authorship.

**The Spawning Habits, Eggs and Larvae of the Sea Raven, *Hemirhamphus americanus***, in Southern New England, by Herbert E. Warfel and Daniel Merriman.

**The Synonymy of *Myoxocephalus aeneus* and *mitchilli***, by Willard D. Hartman.

**A Size Record for the Winter Flounder, *Pseudopleuronectes americanus* (Walbaum)**, by James E. Morrow.

**Notes on *Palinurichthys perciformis*, and the Evidence for its Bathypelagic Habitat**, by Daniel Merriman.

**Using our Marine Resources**, by Daniel Merriman.

**The Occurrence of a Cardio-Inhabitor in the Ovaries of the Puffer, *Spheroides maculatus***, by Warren H. Yudkin.

**Trash Fish**, by Warren H. Yudkin.

## Distribution of Trout

1942—1943

## BROOK TROUT FRY

## HARTFORD COUNTY

Name and Location of Water	1942	1943
Austin Brook, East Granby & Suffield .....	2,000	10,000
Big Brook, Avon .....	2,000	5,000
Bradley Brook, Granby .....		11,072
Buckhorn Brook, Enfield .....	2,000	
Burlington Brook, Burlington .....		10,000
Cherry Brook, Canton .....		10,000
Chidsey Brook, Avon .....	4,000	5,000
Creamery Brook, East Granby .....		16,072
Cuishman Brook, Granby .....		11,072
Devine Brook, Suffield .....	2,000	5,000
Iron Ore Brook, Windsor .....		11,072
Jim's Brook, Canton .....		10,000
Marshall Phelps Farm Brook, Windsor .....		11,072
Mill Brook, Windsor .....		16,608
Minister Brook, Simsbury .....	2,000	15,000
Muddy Brook, East Granby .....	4,000	11,072
Nod Brook, Avon .....	2,000	10,000
Roaring Brook, Canton .....		10,000
Spencer Brook, Suffield .....	2,000	
State Line Brook, Suffield .....		10,000
Stratton Brook, Simsbury .....		15,000
Terry Brook, Enfield .....	2,000	
Thompson Brook, Avon .....	4,000	10,000
Whittemore Brook, Suffield & East Granby .....	4,000	10,000
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	32,000	223,040

## NEW HAVEN COUNTY

Turrill Brook, Roxbury .....	2,500
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## NEW LONDON COUNTY

Cranberry Meadow Brook, East Lyme .....	4,000
Jordan Brook, Waterford .....	6,000
Meadow Brook, Colchester .....	5,000
Savitsky Brook, Colchester .....	2,000
Stony Brook, Montville .....	2,000
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	19,000

## FAIRFIELD COUNTY

Cavanaugh's Brook, Newtown .....	3,000
Curtis Pond Brook, Newtown .....	3,000
Farrar's Brook, Trumbull .....	2,112
Ondex Pond Brook, Monroe .....	3,000
Otter Brook, Newtown .....	3,000
Pierson's Brook, Newtown .....	3,000
Federick's Brook, Newtown .....	4,000
	<hr/>
	21,112

## WINDHAM COUNTY

Name and Location of Water	1942	1943
Gardner Brook, Ashford .....	3,400	
Lipps Brook, Ashford .....	3,000	
Moritz Brook, Ashford .....	4,000	
Squaw Hollow Brook, Ashford .....	3,000	
	<hr/>	<hr/>
	13,400	

## LITCHFIELD COUNTY

Bantam River, West Branch, Litchfield .....		4,000
Beaver Brook, Barkhamsted .....		10,600
Bee Brook, Washington .....		4,000
Butternut Brook, Litchfield .....		4,000
Camp Brook, Roxbury .....	2,500	
Cider Mill Brook, Bridgewater .....	4,000	
Clapboard Oak Brook, Bridgewater .....	2,000	
Fox Brook, Goshen .....		2,000
Great Brook, New Milford .....	2,000	
Gulf Stream, Torrington .....		3,000
Hill Brook, Litchfield .....	5,000	4,000
Ivy Mt. Brook, Goshen .....		3,000
Lenevig Brook, Roxbury .....	6,000	
Little Jack Brook, Roxbury .....	2,000	
Moosehorn Brook, Roxbury .....	4,000	
Mohawk Brook, Goshen .....		4,000
Morgan Brook, Barkhamsted .....		10,000
Naugatuck River, East Branch, Winchester .....		4,000
Naugatuck River, West Branch, Torrington .....		4,000
Nepaug River, New Hartford .....		10,000
North Brook, New Hartford .....		10,000
Nylbs Brook, Morris .....	4,000	
Pierce Brook, Roxbury .....	2,000	
Roxbury Brook, Roxbury .....	2,000	
Shears Brook, Morris .....	4,000	
Town Farm Brook, New Milford .....	4,000	
Viningram Brook, Washington .....	4,000	
Lake Waramaug Brook, Warren .....		4,000
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	47,500	80,600

## MIDDLESEX COUNTY

Camp Stuart Brook, East Hampton .....	2,000
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## TOLLAND COUNTY

Abbey Brook, Somers .....	2,000
Alden Brook, Stafford .....	2,000
Bahler's Brook, Ellington .....	1,000
Codfish Falls Brook, Mansfield .....	2,000
Crystal Lake Brook, Stafford .....	2,000
Gulf Stream, Somers .....	2,000
Pease's Brook, Somers .....	1,500
Kimball's Brook, Ellington .....	1,000
Macht Brook, Columbia .....	6,000
McIntyre's Brook, Stafford .....	1,000
Muddy Brook, Ellington .....	2,500
Raymond Brook, Hebron .....	4,000

Name and Location of Water	1942	1943
Salmon River, Hebron .....	2,000	
Saw Mill Brook, Mansfield .....	2,000	
Thrasher Brook, Somers .....	2,000	
Weaver Brook, Mansfield .....	3,000	
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	36,000	
Total No. Brook Trout Fry .....	173,512	303,640

## BROOK TROUT FINGERLINGS

## HARTFORD COUNTY

Beaver Brook, Simsbury .....	1,500	
Burlington Brook, Burlington .....	1,340	
Farm Brook, South Windsor .....		2,000
Hop Brook, Simsbury .....	1,920	2,500
Johnsons Brook, South Windsor .....		1,000
Ketch Brook, East Windsor .....		1,500
Podunk River, South Windsor .....		2,000
Stratton Brook, Simsbury .....	1,000	2,600
Whaples Brook, South Windsor .....		1,000
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	5,760	12,600

## NEW HAVEN COUNTY

Bladens River, Bethany & Woodbridge .....		1,900
Cotton Hollow Brook, Bethany .....		1,940
Hammonasset River, Madison .....		3,100
Harbor Brook, Meriden .....	3,000	2,000
Harbor Brook, East Branch, Meriden .....	4,000	2,000
Huzzle Guzzle Brook, Madison .....		5,000
Meetinghouse Brook, Meriden .....		2,000
Pine Brook, Bethany .....		1,000
Town Farm Brook, Hamden .....		1,600
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	7,000	20,540

## NEW LONDON COUNTY

Cranberry Meadow Brook, East Lyme .....	5,500	2,600
Denison Brook, Voluntown .....	1,500	2,000
Great Meadow Brook, Voluntown .....	2,400	2,000
Jordan Brook, Waterford .....	5,500	2,500
Koistenen Brook, Voluntown .....		2,000
Meadow Brook, Colchester .....		2,500
Mt. Misery Brook, Voluntown .....	27,930	3,500
Myron Kinnie Brook, Voluntown .....	3,000	
Pachaug River, Voluntown .....	700	500
Pratt Brook, Voluntown .....		500
Savitsky Brook, Colchester .....		2,500
Stony Brook, Montville .....	5,500	
Wolf Brook, Colchester .....		2,000
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	52,030	22,600

## FAIRFIELD COUNTY

Name and Location of Water	1942	1943
Cavanaugh's Brook, Newtown		1,000
Curtis Pond Brook, Newtown		1,000
Dibbles Brook, Bethel	3,000	2,000
Eagan Brook, Newtown	3,000	1,000
Farrar's Brook, Trumbull		1,000
Hattertown Brook, Newtown	3,000	1,000
Morgan Brook, Newtown	3,000	1,000
Norwalk River, Wilton	3,500	
Ondex Pond Brook, Monroe		1,000
Otter Brook, Newtown		1,000
Pequonnock River, Monroe	3,500	2,000
Pequonnock River, East Branch, Monroe	3,155	
Pequonnock River, West Branch, Monroe	3,000	1,000
Pierson's Brook, Newtown		2,000
Pocono Brook, Newtown	2,000	2,000
Pootatuck River, North Branch, Newtown	2,281	1,000
Putnam Park Brook, Bethel	2,000	2,000
Rodericks Brook, Newtown		1,000
Scudder Brook, New Fairfield	2,000	1,000
Shadow Brook, Ridgefield	3,000	1,000
Short Wood Brook, New Fairfield	2,000	1,000
Titicus River, Ridgefield	3,000	3,000
Widow Ball Brook, New Fairfield	2,000	1,000
	<u>43,436</u>	<u>28,000</u>

## WINDHAM COUNTY

Beaver Dam Brook, Eastford	3,000	
Bebbington Brook, Ashford	1,000	1,000
Darling Pond Brook, Chaplin	1,000	
Gardner Brook, Ashford	1,000	1,000
Knowlton Brook, Ashford	2,000	1,000
Lipps Brook, Ashford		1,000
Lyon Brook, Pomfret		2,100
Moritz Brook, Ashford		1,000
Muddy Brook, Woodstock		2,100
Nightingale Brook, Pomfret		2,100
Quaker Meetinghouse Brook, Pomfret	2,000	
Squaw Hollow Brook, Ashford	1,000	1,000
	<u>11,000</u>	<u>12,300</u>

## LITCHFIELD COUNTY

Bantam River Outlet, Litchfield	2,700	
Bantam River, Tributary to Bantam Lake, Litchfield	8,000	
Bantam River, West Branch, Litchfield	2,000	
Bee Brook, Washington	3,000	
Bullemuck Brook, New Milford	3,000	2,000
Butternut Brook, Litchfield	8,000	
Carsh Brook, Sharon	2,000	2,000
Compensating Reservoir, New Hartford & Barkhamsted	22,316	20,700
Furnace Brook, Cornwall	3,000	3,000
Guna Brook, Sharon		2,500
Gunn Brook, Cornwall	2,084	2,500
Hall Meadow Brook, Norfolk	2,600	
Macedonia Brook, Sharon		3,000
Marshepaug River, Goshen	2,000	

Name and Location of Water	1942	1943
Naugatuck River, East Branch, Winchester .....	3,000	
Naugatuck River, West Branch, Torrington .....	2,000	
Potter Brook, Cornwall .....	2,000	2,000
Shepaug River, East Branch, Litchfield & Goshen .....	8,000	
Lake Waramaug Brook, Warren .....	3,000	
West Norfolk Brook, Norfolk .....	3,000	
Wickwire Brook, Canaan & Cornwall .....	3,000	3,000
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	84,700	40,700

## MIDDLESEX COUNTY

Baroni's Brook, Haddam .....	1,292	1,500
Beaver Brook, Haddam .....	2,000	1,500
Bible Rock Brook, Middletown & Haddam .....	2,000	1,500
Camp Stuart Brook, East Hampton .....		2,500
Candlewood Hill Brook, Haddam .....		2,000
Cattle Lot Brook, East Hampton .....		1,000
Flat Brook, East Hampton .....		2,500
Green River, East Hampton .....		2,500
Hale Brook, East Hampton .....		2,000
Half Way Brook, Haddam .....		1,500
Hammer Shop Brook, Cromwell .....	3,000	1,500
Mine Brook, East Hampton .....		500
Muddy Gutter Brook, East Hampton .....		1,500
Pole Bridge Brook, Haddam .....	2,000	1,500
Ponset Brook, Haddam .....	2,000	2,000
Saltpeter Brook, Haddam .....	1,000	2,375
Soestrom Brook, East Hampton .....		2,000
Sumner Brook, Middletown .....		2,000
Turkey Hill Brook, Haddam .....		1,500
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	13,292	33,375

## TOLLAND COUNTY

Abbey Brook, Somers .....		2,000
Avery Brook, Somers .....		6,000
Bahler's Brook, Ellington .....		3,000
Brandy Brook, Stafford .....		2,000
Cedar Swamp Brook, Stafford .....		3,000
Cemetery Brook, Tolland .....		3,000
Charter's Brook, Tolland .....		3,000
Codfish Falls Brook, Mansfield .....	1,000	1,000
Grapevine Brook, Tolland .....		3,000
Hop River, Bolton .....		500
Kalis Brook, Tolland .....		3,000
Kimball's Brook, Ellington .....		3,000
Macht Brook, Columbia .....		2,000
McIntyre's Brook, Stafford .....		3,000
Muddy Brook, Ellington .....		7,500
A. Pease's Brook, Somers .....		2,000
Peck's Brook, Ellington .....		1,500
Polk Hill Brook, Tolland .....		3,000
Railroad Brook, Vernon .....		2,000
Raymond Brook, Hebron .....		2,500
Ruby Brook, Willington .....		2,000
Salmon River, Hebron .....		1,800
Schanade Brook, Somers .....		4,000

Name and Location of Water	1942	1943
Staddle Brook, Andover .....		500
Tancanhoosen River, Vernon .....		750
Thrasher Brook, Somers .....		5,000
Town Brook, Vernon .....		2,000
Weaver Brook, Mansfield .....		1,000
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	1,000	73,050
Total No. Brook Trout Fingerlings .....	218,218	243,165

## BROOK TROUT ADULTS

## One Year

## HARTFORD COUNTY

Name and Location of Water	1942	1943
Belcher Brook, Berlin .....	150	200
Buckhorn Brook, Enfield .....	550	600
Bunnell Brook, Burlington .....	200	
Bunnell Brook, North Branch, Burlington .....	200	200
Cannons Brook, Suffield & Granby .....	453	250
Cherry Brook, Canton .....	600	460
Cold Brook, Glastonbury .....	300	373
Copper Mine Brook, Bristol .....	400	400
Dark Hollow Brook, Glastonbury .....	200	
Dry Brook, South Windsor .....	200	200
Fawn Brook, Marlborough .....	300	
Fawn Brook, West Branch, Marlborough .....		300
Filley Brook, Bloomfield .....		200
Freshwater Brook, Enfield .....	650	700
Goff Brook, Wethersfield .....		550
Iron Ore Brook, Windsor & Bloomfield .....	100	100
Johnsons Brook, South Windsor .....	200	100
Kettle Brook, Windsor Locks .....	150	232
Mill Brook, Windsor & Bloomfield .....	325	225
Podunk River, South Windsor .....	550	300
Porter Brook, East Hartford .....	100	450
Pumping Station Brook, Berlin .....	200	465
Quinnipiac River, Southington .....	1,000	440
Roaring Brook, Glastonbury .....	900	248
Salmon Brook, Glastonbury .....	200	200
State Line Brook, Suffield .....	350	200
Stony Brook, Suffield .....	250	200
Stratton Brook, Simsbury .....	650	350
Trout Brook, West Hartford .....		1,050
Wash Brook, Bloomfield .....		200
Whaples Brook, South Windsor .....	75	
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	9,253	9,193

## NEW HAVEN COUNTY

Bladens River, Woodbridge & Bethany .....	400	300
Cotton Hollow Brook, Bethany & Naugatuck .....	500	300
Eight Mile Brook, Southbury & Oxford .....	750	750
Hancock Brook, Waterbury .....	2,394	
Harbor Brook, Meriden .....	100	100
Harbor Brook, East Branch, Meriden .....	200	200
Harbor Brook, North Branch, Meriden .....	150	

Name and Location of Water	1942	1943
Hitchcock Lake Brook, Wolcott .....	100	
Hop Brook, Middlebury, Waterbury & Naugatuck .....	800	750
Hopp Brook, Bethany .....		200
Lilly Brook, Wolcott .....	300	
Little River, Oxford .....	800	400
Long Meadow Pond Brook, Naugatuck .....	200	200
Mad River, Wolcott & Waterbury .....	1,880	150
Meetinghouse Brook, Meriden .....	100	100
Neck River, Madison .....	250	
Prospect Street Brook, Naugatuck & Prospect .....	100	100
Shattuck Brook, Naugatuck & Middlebury .....	150	100
Town Farm Brook, New Haven .....		400
West River, Woodbridge & New Haven .....	400	400
Wilmot Brook, Hamden .....	150	
	<hr/> 9,724	<hr/> 4,450

## NEW LONDON COUNTY

Anguilla Brook, Stonington .....	550	525
Copp's Brook, Stonington .....	600	475
Denison Brook, Voluntown .....	500	200
Exeter Brook, Lebanon .....	250	225
Fraser Brook, Salem .....	75	50
Gardner Brook, Bozrah .....	100	
Great Meadow Brook, Voluntown .....	800	700
Harris Brook, Salem .....	100	100
Hunts Brook, Waterford .....	200	
Indiantown Brook, Preston .....	100	100
Jordan Brook, Waterford .....	700	300
McCarthy's Brook, Franklin .....	200	275
McGuire Brook, Groton .....	350	375
Meadow Brook, Colchester .....	650	350
Mountain Brook, Franklin .....	400	
Oxoboxo Brook, Montville .....	100	100
Pachaug River, Voluntown .....	525	400
Palmer Brook, Griswold .....	100	
Pease Brook, Lebanon .....	200	175
Pendleton Hill Brook, North Stonington .....	600	575
Shunock Brook, North Stonington .....	600	575
Stony Brook, Montville .....	400	400
Susquetonscut Brook, Lebanon & Franklin .....	300	575
Ten Mile River, Lebanon & Columbia .....	300	
Whitford's Brook, Groton, Stonington & Ledyard .....	450	525
Wyassup Brook, North Stonington .....	150	100
	<hr/> 9,300	<hr/> 7,100

## FAIRFIELD COUNTY

Ball Pond Brook, New Fairfield .....	850	1,200
Chestnut Hill Brook, Wilton .....		900
Comstock Brook, Wilton .....		2,400
East Swamp Brook, Danbury .....	350	550
Five Mile River, New Canaan .....		350
Goetzen Brook, Wilton .....		400
Lime Kiln Brook, Bethel .....	700	1,000
Mayapple Brook, Wilton .....		800
Mill River, Fairfield .....	400	

Name and Location of Water	1942	1943
Morrissey Brook, New Milford .....	250	
Pond Brook, Newtown .....	650	400
Pootatuck River, Newtown .....	650	900
Rippowam River, Stamford .....	500	600
Titicus River, Ridgefield .....	700	500
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	5,050	10,000

## WINDHAM COUNTY

Bungee Brook, Eastford & Woodstock .....	700	100
Carson Brook, Sterling .....	100	
Ekonk Brook, Plainfield .....	100	
Five Mile River, Putnam & Killingly .....	350	450
Herridean Brook, Woodstock .....	150	
Horse Brook, Plainfield .....		200
Kitt Brook, Canterbury .....	718	450
Knowlton Brook, Ashford .....	100	
Mary Brown Brook, Putnam .....	100	100
Mashamoquet Brook, Pomfret .....	950	595
Mashentuck Brook, Killingly .....	150	150
Merrick Brook, Scotland .....	100	
Mill Brook, Plainfield .....	150	250
Muddy Brook, Woodstock .....	700	675
Nightingale Brook, Woodstock & Pomfret .....	200	
Quadock Brook, Sterling .....	700	700
Quaker Meetinghouse Brook, Pomfret .....	50	
Still River, Eastford & Woodstock .....	530	700
Stone House Brook, Chaplin .....	100	
Taylor Brook, Woodstock .....	300	375
Whetstone Brook, Killingly .....	100	
Willimantic River, Windham .....		200
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	6,348	4,945

## LITCHFIELD COUNTY

Beaver Brook, Barkhamsted .....	500	
Branch Brook, Thomaston & Watertown .....	400	400
Cider Mill Brook, Bridgewater .....	300	
Compensating Reservoir, New Hartford .....	3,666	
Hancock Brook, Plymouth & Waterbury .....	1,100	1,100
Hollenbeck River, Canaan .....	400	
Mad River, Winchester .....	300	400
Marshpaug River, Goshen & Litchfield .....	200	
Mill Brook, Sharon .....	250	
Mill Brook, Winchester .....	200	100
Morgan Brook, New Hartford .....	550	
Naugatuck River, East Branch, Torrington & Winchester .....	250	250
Naugatuck River, West Branch, Torrington .....	250	250
Nepaug River, New Hartford .....	1,622	700
Northfield Brook, Thomaston & Litchfield .....	200	200
Riga Brook, Salisbury .....	300	
Shepaug River, East Branch, Goshen .....	300	
Spruce Swamp Brook, Salisbury .....	200	
Ten Mile River, Sharon .....		125
Wangam Lake Brook, Canaan .....	300	
Lake Waramaug Brook, Warren .....	400	
Whiting River, North Canaan .....	150	
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	11,838	3,525

## MIDDLESEX COUNTY

Name and Location of Water	1942	1943
Allyn's Brook, Durham	150	150
Asmunds Brook, Durham	75	75
Balls Brook, Durham	175	175
Beaver Brook, Haddam	600	300
Bible Rock Brook, Middletown & Haddam	550	750
Boones Brook, Westbrook	100	100
Buck Brook, Portland	150	150
Candlewood Hill Brook, Haddam	375	300
Carr Brook, Portland	200	
Cox Brook, Portland	150	200
Deep River, Saybrook	325	
Fowler Brook, Durham	125	125
Great Brook, Chester	200	
Hales Brook, Portland	250	150
Hammer Shop Brook, Cromwell	250	350
Hersig Brook, Durham	100	100
Indian River, Clinton		475
Long Hill Brook, Middletown		269
Mine Brook, East Hampton	100	
Muddy Brook, East Haddam	150	
Parmalee Brook, Durham	300	200
Patchogue Brook, Westbrook	175	175
Pine Brook, East Hampton & Haddam	400	
Ponset Brook, Haddam	400	300
Reservoir Brook, Portland	500	300
Saw Mill Brook, Durham	125	125
Sumner Brook, Middletown	75	75
Trout Brook, Westbrook	300	200
Wadsworth Brook, Durham	100	100
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	6,400	5,144

## TOLLAND COUNTY

Alden Brook, Stafford	500	
Crystal Lake Brook, Stafford	1,300	700
Eagleville Brook, Mansfield	100	100
Ginger Brook, Stafford	100	100
Gulf Stream, Somers	700	400
Hop River, Andover, Coventry & Bolton	1,500	200
Macht Brook, Columbia	250	250
Peck's Brook, Ellington	550	250
Raymond Brook, Hebron	350	350
Skungamaug River, Coventry, Andover & Tolland	2,000	600
Tancanhoosen River, Vernon	1,250	550
Thrasher Brook, Somers	100	100
Tucker Brook, Vernon	100	
Walkers Reservoir, Lower Pond, Vernon		845
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	8,800	4,445
No. of One Year Brook Trout Adults Planted in Streams		
Other Than State-controlled	66,713	48,802

## BROOK TROUT ADULTS

## Two Year

## HARTFORD COUNTY

Burlington Brook, Burlington		60
Kettle Brook, Windsor Locks		145
Roaring Brook, Glastonbury		100
Salters Pond, Manchester		300
Stony Brook, Suffield		300
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## NEW HAVEN COUNTY

Name and Location of Water	1942	1943
Cotton Hollow Brook, Naugatuck .....	200	
Hammonasset River, Madison, Clinton & Killingworth ..		125
Hancock Brook, Waterbury .....	425	220
Hitchcock Lake Brook, Wolcott .....	100	
Hop Brook, Middlebury, Naugatuck & Waterbury .....	200	248
Huzzle Guzzle Brook, Madison .....		75
Lilly Brook, Wolcott .....	100	
Mad River, Wolcott & Waterbury .....	775	420
Prospect St. Brook, Naugatuck .....	175	
West River, New Haven .....		133
Wilmot Brook, Hamden .....		130
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	1,975	1,351

## NEW LONDON COUNTY

Anguilla Brook, Stonington .....	100	75
Copp's Brook, Stonington .....	75	50
Denison Brook, Voluntown .....	125	25
Exeter Brook, Lebanon .....		25
Great Meadow Brook, Voluntown .....	159	150
McCarthy's Brook, Franklin .....		50
McGuire Brook, Groton .....	50	50
Pachaug River, Voluntown .....		25
Pease Brook, Lebanon .....		25
Pendleton Hill Brook, North Stonington .....	150	75
Shunock Brook, North Stonington .....	125	50
Seth Williams Brook, Ledyard .....	100	
Susquetonscut Brook, Franklin & Lebanon .....	100	50
Whitfords Brook, Stonington .....		75
Wyassup Brook, North Stonington .....	50	
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	1,034	725

## FAIRFIELD COUNTY

Rippowam River, Stamford .....	500	555
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## WINDHAM COUNTY

Still River, Eastford & Woodstock .....	100	
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## LITCHFIELD COUNTY

Hancock Brook, Plymouth & Waterbury .....	175	200
Ten Mile River, Sharon .....		25
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	175	225

## MIDDLESEX COUNTY

Bible Rock Brook, Middletown & Haddam .....		175
Candlewood Hill Brook, Haddam .....		100
Reservoir Brook, Portland .....	25	
Sumner Brook, Middletown .....		75
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	25	350

TOLLAND COUNTY

Name and Location of Water	1942	1943
Crystal Lake, Stafford & Ellington .....	873	
Walkers Reservoir, Vernon .....		310
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	873	310
No. of Two Year Brook Trout Adults Planted in Streams Other Than State-controlled .....	4,682	4,421

BROWN TROUT ADULTS

One & Two Year

HARTFORD COUNTY

Name and Location of Water	1942 Two Year	1943 One Year	1943 Two Year
Kettle Brook, Windsor Locks .....			49
Roaring Brook, Glastonbury .....	450		900
Salters Pond, Manchester .....			200
Scantic River, East Windsor .....	350		400
State Line Brook, Suffield .....		500	
Stony Brook, Suffield .....	100	500	150
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	900	1,000	1,699

NEW HAVEN COUNTY

Hammonasset River, Madison & Clinton ....	100		
Mad River, Wolcott & Waterbury .....			300
Quinnipiac River, Cheshire & Meriden .....	850		500
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	950		800

NEW LONDON COUNTY

Exeter Brook, Lebanon .....			1,488
Four Mile River, East Lyme .....	150		
Pease Brook, Lebanon .....			1,487
U. S. Submarine Base Ponds, Groton .....		1,000	
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	150	1,000	2,975

FAIRFIELD COUNTY

Rippowam River, Stamford .....	730		475
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WINDHAM COUNTY

Quinebaug River, Canterbury, Killingly & Plainfield .....	1,100		1,020
Willimantic River, Windham .....			300
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	1,100		1,320

TOLLAND COUNTY			
Name and Location of Water	1942	1943	1943
	Two Year	One Year	Two Year
Hockanum River, Ellington .....	300		
Hop River, Andover, Coventry & Bolton ....	750		200
Middle River, Stafford .....	350		200
Skungamaug River, Coventry & Andover ....	250		150
Walkers Reservoir, Vernon .....			707
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	1,650		1,257
No. of One and Two Year Brown Trout Adults Planted in Streams Other Than State-controlled .....	5,480	2,000	8,526

### RAINBOW TROUT FINGERLINGS

#### FAIRFIELD COUNTY

Name and Location of Water	1942	1943
Ball Pond Brook, New Fairfield .....	8,300	5,000
Greenwoods Brook, Sherman .....	2,500	6,200
Greenwoods Brook, South Branch, Sherman .....	5,000	5,000
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	15,800	16,200

#### WINDHAM COUNTY

Beaver Dam Brook, Eastford .....	10,000	5,000
Buttonball Brook, Chaplin .....		5,000
Darling Pond Brook, Chaplin .....	2,000	1,000
Read Brook, Ashford .....	2,000	
Slovik Brook, Eastford .....		1,000
Sugar Brook, Plainfield .....	2,000	
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	16,000	12,000

#### LITCHFIELD COUNTY

Compensating Reservoir, Barkhamsted .....	3,000
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#### TOLLAND COUNTY

Cemetery Brook, Tolland .....		4,500
Total No. Rainbow Trout Fingerlings .....	34,800	32,700

### RAINBOW TROUT ADULTS

#### One & Two Year

#### FAIRFIELD COUNTY

Name and Location of Water	1942	1942
	One Year	Two Year
Ball Pond, New Fairfield .....	1,212	1,200

LITCHFIELD COUNTY

	1942 One Year	1942 Two Year
Compensating Reservoir, Barkhamsted .....	1,830	

TOLLAND COUNTY

Crystal Lake, Ellington & Stafford .....		1,500
No. of One and Two Year Rainbow Trout Adults Planted in Streams Other Than State-controlled .....	3,042	2,700

LAKE TROUT FINGERLINGS

LITCHFIELD COUNTY

	1943
East Twin Lake, Salisbury .....	1,450
Lake Wononscopomuc, Salisbury .....	1,500
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	2,950

LAKE TROUT ADULTS

One Year

LITCHFIELD COUNTY

East Twin Lake, Salisbury .....	1,500
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## Distribution in State-controlled Waters

### BROOK TROUT ADULTS

#### One & Two Year

Name and Location of Water	1942	1942	1943	1943
	One Year	Two Year	One Year	Two Year
Alexander Lake, Killingly .....		200		
East Aspetuck River, Washington & New Milford .....	2,327	1,223	1,550	1,401
Bantam River Outlet, Litchfield & Morris .....	1,928	772	1,506	915
Beaver Brook, Franklin & Sprague .....	850	475	800	400
Bigelow Brook, Eastford .....	1,900	1,915	1,450	
Blackberry River, Norfolk & North Canaan .....	1,839	161	975	800
Blackledge River, Marlborough & Colchester .....	990	1,490	2,000	2,269
Blackwell Brook, Brooklyn & Canterbury .....	900	1,171	1,200	150
Branford River, Branford & North Branford .....	1,500	1,300	1,374	722
Broad Brook, Ellington .....	800	1,091	1,000	500
Broad Brook, Preston .....	700	250	800	500
Chatfield Hollow Brook, Killingworth .....	1,500	1,200	1,000	572
Coginchaug River, Durham .....	900	450	700	250
Dickinson Creek, Colchester & Marlborough .....	1,325	475	1,025	375
Eight Mile River, East Haddam .....	600	700	700	200
Farm River, North Branford & East Haven .....	2,000	901	2,070	1,148
Farmington River, Canton, New Hartford & Barkhamsted .....	918	1,235	800	490
Farmington River, West Branch, Colebrook, Barkhamsted, New Hartford & Hartland .....	2,900	6,493	5,960	2,403
Fenton River, Mansfield .....	1,050	1,950	2,475	200
Housatonic River, Cornwall & Sharon .....	2,100	13,048		6,021
Jeremy's River, Colchester .....	575	325	450	225
Kent Falls Brook, Kent .....	1,900	300		
Lafayette Pond, Somers .....		1,500		1,654
Latimer Brook, Montville & East Lyme .....	2,750	1,720	850	731
Little River, Scotland, Canterbury & Putnam .....	800	200	1,150	
Macedonia Brook, Kent .....	2,500	500	1,600	92
Mill River, New Haven & Hamden .....	1,500	1,812	1,700	1,100
Moriarty's Pond, Wilton .....			4,700	
Mount Hope River, Ashford & Mansfield .....	1,200	1,400	1,750	157
Mount Misery Brook, Voluntown .....	2,400	934	950	550
Muddy River, Wallingford, North Haven & North Branford .....	975	800	1,060	580
Myron Kinzie Brook, Voluntown .....	900	650	600	500
Natchaug River, Eastford, Chaplin, Windham & Mansfield .....	4,380	10,273	700	2,457
Norwalk River, Wilton & Norwalk .....	4,200	2,308	1,200	2,300
Pequonnock Riv., Monroe, Trumbull & Bridgeport .....	4,250	2,336	1,000	2,874
Pomperaug River, Woodbury & Southbury .....	3,569	1,766	2,050	540
Roaring Brook, Willington & Stafford .....	1,750	3,768	1,873	2,387
Salmon Brook, East Branch, Granby .....	2,400	1,100	1,650	627
Salmon Brook, West Branch, Granby .....	300			100
Salmon River, Colchester & East Hampton .....	850	4,865	500	2,085
Sandy Brook, Colebrook .....	2,550	1,250	1,100	600
Scantic River, Somers .....	1,550	2,079	1,800	400
Schreeder Pond, Killingworth .....		515		
Shepaug River, Roxbury, Southbury & Washington .....	1,600	100	1,750	540
Snake Meadow Brook, Killingly & Plainfield .....	1,500	1,800	2,600	300
Trading Cove Brook, Bozrah & Montville .....	800	200	700	200
Weekeepeemee River, Woodbury .....	600		450	
West Hill Pond, New Hartford .....				398
No. of Brook Trout Adults Planted in State-controlled Waters .....	72,826	79,001	59,568	40,713

**BROWN TROUT ADULTS**

**Two Year**

	1942	1943
East Aspetuck River, Washington & New Milford .....	700	526
Blackledge River, Marlborough & Colchester .....	1,492	1,642
Blackwell Brook, Brooklyn & Canterbury .....	1,100	1,193
Coginchaug River, Durham .....	500	352
Eight Mile River, East Haddam .....	548	300
Farm River, North Branford & East Haven .....	1,000	1,418
Farmington River, Canton, New Hartford, Avon, Farmington, East Granby, Barkhamsted & Simsbury .....	3,569	3,000
Farmington River, West Branch, New Hartford, Colebrook, Hartland & Barkhamsted .....	250	300
Housatonic River, Cornwall, Sharon & Bridgewater .....	5,450	5,285
Jeremy's River, Colchester .....	400	530
Latimer Brook, Montville & East Lyme .....	300	500
Little River, Canterbury .....	100	
Mill River, Hamden .....	800	696
Muddy River, Wallingford, North Branford & North Haven .....	650	750
Norwalk River, Wilton .....	800	1,034
Pequonnock River, Bridgeport & Trumbull .....	900	862
Pompeaug River, Woodbury & Southbury .....	1,200	1,259
Salmon Brook, East Branch, Granby & East Granby .....	700	400
Salmon River, Colchester & East Hampton .....	2,425	1,460
Scantic River, Somers .....	985	1,410
Shepaug River, Roxbury, Southbury & Washington .....	1,000	1,100
Willimantic River, Willington & Mansfield .....	1,833	1,504
Yantic River, Bozrah & Lebanon .....	1,300	691
No. of Brown Trout Adults Planted in State-controlled Waters .....	28,002	26,212

**RAINBOW TROUT ADULTS**

**One & Two Year**

Name and Location of Water	1942	1942	1943	1943
	One Year	Two Year	One Year	Two Year
Alexander Lake, Killingly .....	1,577	300		2,320
Ball Pond, New Fairfield .....			2,056	3,379
Blackledge River, Marlborough & Colchester .....		1,493		1,000
Cream Hill Pond, Cornwall .....		1,000		3,430
Crystal Lake, Ellington & Stafford .....			4,129	12,027
Farmington River, New Hartford, Farmington, Canton, Simsbury, East Granby, Avon & Barkhamsted .....	1,500	900		1,675
Moriarty's Pond, Wilton .....		800		
Natchaug River, Eastford, Chaplin & Windham .....	1,500	1,670		2,795
Lake Quassapaug, Woodbury & Middlebury .....	2,359	2,706	1,647	9,633
Salmon River, Colchester & East Hampton .....	500	175		391
Schreeder Pond, Killingworth .....		300		500
Trumbull Reservoir, Trumbull .....		500	1,691	
West Hill Pond, New Hartford .....	1,181	2,181	4,294	6,029
Lake Wononscopomuc, Salisbury .....	4,341	6,044	12,080	8,130
Yantic River, Bozrah & Lebanon .....	500	738		1,007
No. of Rainbow Trout Adults Planted in State-controlled Waters .....	13,458	18,807	25,897	52,316

## LAKE TROUT ADULTS

One Year

	1942	1943
Lake Wononscopomuc, Salisbury .....		1,500
TOTAL NO. OF TROUT PLANTED .....	721,241	853,910

## SUMMARY STATEMENT OF TROUT PLANTED

	1942	1943
<b>Fry</b>		
Brook Trout .....	173,512	303,640
<b>Fingerling</b>		
Brook Trout .....	218,218	243,165
Rainbow Trout .....	34,800	32,700
Lake Trout .....		2,950
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	253,018	278,815
<b>Adults Planted in State-controlled Waters</b>		
Brook Trout—1 yr. ....	72,826	59,568
Brook Trout—2 yr. ....	79,001	40,713
Brown Trout—2 yr. ....	28,002	26,212
Rainbow Trout—1 yr. ....	13,458	25,897
Rainbow Trout—2 yr. ....	18,807	52,316
Lake Trout—1 yr. ....		1,500
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	212,094	206,206
<b>Adults Planted in Other Waters</b>		
Brook Trout—1 yr. ....	66,713	48,802
Brook Trout—2 yr. ....	4,682	4,421
Brown Trout—1 yr. ....		2,000
Brown Trout—2 yr. ....	5,480	8,526
Rainbow Trout—1 yr. ....	3,042	
Rainbow Trout—2 yr. ....	2,700	
Lake Trout—1 yr. ....		1,500
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	82,617	65,249
<b>Total Adults Planted</b>		
Brook Trout—1 yr. ....	139,539	108,370
Brook Trout—2 yr. ....	83,683	45,134
Brown Trout—1 yr. ....		2,000
Brown Trout—2 yr. ....	33,482	34,738
Rainbow Trout—1 yr. ....	16,500	25,897
Rainbow Trout—2 yr. ....	21,507	52,316
Lake Trout—1 yr. ....		3,000
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	294,711	271,455
TOTALS OF ALL TROUT PLANTED .....	721,241	853,910

## Distribution of Fishes to Lakes and Ponds

Season of 1942

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Beachland Pond ..... West Hartford	31	333			2,996		3,000
Beaver Pond ..... Meriden	20	150			35		
Beckley Pond ..... Berlin		8		2	4,000	5,000	700
Black Pond ..... Meriden	45	15,241	7 L.M.		2,681		
Black Rock Pond .... Watertown		319			11,704		
Candlewood Lake .... Danbury, Brookfield & New Fairfield	471	5,325 W.8,326			7,193		
Chestnut Hill Reservoir Wolcott	2	25	45 S.M.		10		20
Clark Pond ..... Berlin		1,228			93		
Dorrs Pond ..... New Britain		1,228			92		
East Rock Park Lagoon New Haven	3	5,399			1,192		1,582
Fulton Park Pond, Lower Waterbury		1,055	51 S.M.	70	131		593
Hall's Pond ..... Eastford		1,200	S.M.				
Hitchcock Lakes ..... Waterbury & Wolcott	78	47	109 S.M.		532		2,371
Lily Pond ..... Thompson	26	854			72		606
Mirror Lake ..... Meriden				642			
Od Marsh Pond ..... Plymouth						3,000	
Paderewski Park Pond Plainville		5,700					
Plant's Pond ..... Groton						2,000	
Lake Pocotopatug .... East Hampton	37						



## DISTRIBUTION OF FISHES TO LAKES AND PONDS

Season of 1943

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Amos Lake .....	75	350			5,050	1,800	250
Preston							
Aspinook Pond .....		500			4,400	500	250
Griswold, Lisbon & Canterbury							
Avery Pond .....		200			3,250	500	100
Preston							
Baltic Pond .....	100	1,250		650	1,500	1,500	500
Sprague							
Beach Pond .....		125			1,500	500	
Voluntown							
Beachdale Pond .....		125			1,650	500	
Voluntown							
Beardsley Park Pond	100						
Bridgeport							
Big Pond .....	22	194	4 S.M.		1,370		
Windham							
Black Pond .....		150		200	2,475	1,500	
Middlefield & Meriden							
Black Pond .....	3	647	3 S.M.		345		
Woodstock							
Bolton Notch Pond ..		75		100	2,150	500	500
Bolton							
Bride Lake .....	45	1,513	32 L.M.		346		
East Lyme	(White)28						
Cedar Swamp Pond ..					3,668		
Wolcott & Bristol							
Clayville Pond .....		150			4,800	1,000	250
Griswold							
Columbia Reservoir ..	100						
Columbia							
Crystal Pond .....	103	850	3 S.M.	75	400	500	
Eastford							
Diamond Lake .....		196	222 L.M.				
Glastonbury							
Dodge Pond .....	100	500			2,400	1,500	
East Lyme							
Gardner Lake .....	100				1,500	2,000	
Salem, Montville & Bozrah							
Glasgo Pond .....				200	3,000		
Griswold							

## DISTRIBUTION OF FISHES TO LAKES AND PONDS

(Continued)

Season of 1943

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Gortons Pond .....		1,500		500	1,000	2,000	
East Lyme							
Grant's Pond .....				50	1,500		
Franklin							
Great Hill Pond .....		300			1,800		250
Portland							
Green Falls Reservoir					3,000	1,000	
Voluntown							
Hall's Pond .....	100	150		75		500	
Eastford							
Holbrook Pond .....	100			60	500	500	
Hebron							
Housatonic Lake .....		15			20	1,500	
Derby							
Job's Pond .....					1,650		500
Portland							
Lily Pond .....	17	644	7 S.M.		1,595		
Thompson							
Manitook Lake .....	100	275		115	2,250	1,000	
Granby							
Mashapaug Lake ....	100	100	1,950 S.M.		1,600	1,500	
Union							
Miller's Pond .....	75	100		100		1,500	
Waterford							
Moodus Reservoir ...		100			5,400	1,500	
East Haddam							
Moosup Pond .....	100	100			1,500	1,500	
Plainfield							
Mungers Ponds .....	19	935			324		
Guilford							
North Farms Reservoir	23	707			5,105		
Wallingford							
Oxoboxo Lake .....	100	400			1,500	1,000	
Montville							
Paper Mill Pond .....		150		25	3,000	500	
Sprague							
Pataganset Lake .....	100						
East Lyme							
Peat Works Pond ....	100	301	8 S.M.	100	3,313	1,500	
Berlin & Meriden							
Lake Pocotopaug ....	100				2,500	1,000	
East Hampton							

## DISTRIBUTION OF FISHES TO LAKES AND PONDS

(continued)

Season of 1943

Name of Water Stocked	Pickereel	Yellow Perch	Black Bass	Calico Bass	Bull-heads	Shiners	Roach
Prentise Pond . . . . . Putnam	17	645			1,596		
Lake Quonnipaug . . . . Guilford	52	1,271			8,815	2,000	
Rogers Lake . . . . . Old Lyme	100	200		170		1,500	
Roseland Lake . . . . . Woodstock	200				750	1,000	
Shaker Pond . . . . . Enfield	11	742			257		
Shaw Lake . . . . . East Haddam	111	1,881			5,615	2,500	
Somersville Pond . . . . Somers	100	910			4,040	800	
Stafford Reservoir . . . Stafford	20	311	4 S.M.		3,359		
State Line Pond . . . . Stafford		500		250		1,000	250
Stillwater Pond . . . . . Torrington	150		1,950 S.M.		3,200	1,200	
Taunton Pond . . . . . Newtown			1,950 S.M.				
Terramuggus Lake . . . Marlborough	100	100			1,800	1,500	
Wappaquassett Pond . . Woodstock	100			500		1,000	
Wattles Pond . . . . . Watertown	50				1,000	500	
Waungumbaug Lake . . Coventry	100					2,000	
Wheeler Pond . . . . . Montville		300		250	2,500	1,000	500
Williams Pond . . . . . Lebanon	100	500		300	3,000	1,000	
Willimantic Reservoir Bolton	100		1,950 S.M.		2,150	1,000	
Windsorville Pond . . . East Windsor	38	620		17	3,682		
Totals . . . . .	3,131	20,582	7,829 S.M. (White)28 254 L.M.	3,737	119,125	46,800	3,350

GRAND TOTAL—204,836

## SUMMARY STATEMENT OF PONDFISH PLANTED

Species	Fingerlings	Adults
Pickarel .....		3,131
Yellow Perch .....	211	20,371
White Perch .....		28
Largemouth Black Bass .....	222	32
Smallmouth Black Bass .....	7,800	29
Calico Bass .....		3,737
Bullheads .....	8,020	111,105
Shiners .....	3,500	43,300
Roach .....		3,350
Totals .....	19,753	185,083

GRAND TOTAL—204,836

## DISTRIBUTION OF LOBSTERS—1943

## 3rd Stage Lobsters

Place Where Released	Number
Fishers Island Sound, Groton Long Point .....	5,000

## 4th Stage Lobsters

Fishers Island Sound, Stonington .....	20,000
Fishers Island Sound, Groton Long Point .....	15,000
Long Island Sound, East Lyme .....	15,000
Long Island Sound, Clinton Breakwater .....	15,000
Long Island Sound, Rowayton .....	55,000
Total .....	120,000

## Adult Lobsters

Long Island Sound, Noank .....	1,074
Long Island Sound, Rowayton .....	450
Total .....	1,524

## DISTRIBUTION OF LOBSTERS—1944

## 4th Stage Lobsters

Place Where Released	Number
Branford Harbor, Branford .....	20,000
Clinton Harbor, Clinton .....	20,000
Fishers Island Sound, Groton .....	35,000
Fishers Island Sound, Stonington .....	85,000
Guilford Harbor, Guilford .....	20,000
Long Island Sound, Rowayton .....	50,000
Milford Harbor, Milford .....	20,000
Niantic River, Niantic .....	20,000
Ouiambog Cove, Stonington .....	25,000
Westbrook Harbor, Westbrook .....	20,000
Total .....	315,000

## Adult Lobsters

Fishers Island Sound, Stonington .....	250
Fishers Island Sound, Groton .....	300
Long Island Sound, Clinton .....	320
Long Island Sound, Guilford .....	510
Long Island Sound, Rowayton .....	890
Long Island Sound, Westbrook .....	115
Total .....	<hr/> 2,385

## Division of Wildlife Protection and Law Enforcement

During this wartime biennium most state departments, as well as private industry, curtailed or entirely eliminated many peacetime functions. This was necessitated by contribution of trained personnel to the armed forces and war industry, scarcity of supplies and materials and the lack of items of equipment. Due to the scarcity of gasoline and rubber in this state there were times when it was doubtful if the department could continue to perform even the most necessary services.

It was thought that the large number of young people entering the armed forces, the long hours of industrial employment and the restrictions on transportation would greatly reduce hunting and fishing pressure. The sale of licenses continued at a high level. The entrance of war workers from other states with an interest in hunting and fishing apparently offset the anticipated decrease in license revenue as a result of men entering the armed forces:

Transportation was a problem, but was solved by many. Some did their hunting and fishing while traveling between their homes and places of employment. Some rode trains, buses and bicycles or used any other mode of travel available. A warden checked one angler that had ridden a bicycle with all of his equipment from West Hartford to Crystal Lake, Ellington, a distance of over twenty-five miles one way. The determination of the sportsmen to enjoy this form of recreation resulted in hunting and fishing pressure being maintained at a reasonably high level during the entire biennium.

The demands upon the warden service seemed as great as ever, but all normal activities could not be maintained. At the beginning of the biennium three deputy wardens had entered the armed forces. By October, 1943 one state warden and six deputies had answered military call and one deputy had resigned. The absence of this trained personnel was very keenly felt. The Board voted to fill these vacancies with appointments for the duration of the war. The men on military leave of absence will find their former positions are open to them as they are released from the armed forces.

The State Personnel Department in an effort to meet the requirements of the department conducted four separate examinations, but at the close of the biennium only six duration-of-the-war deputy warden appointments had been made. Although the maximum age limit had been raised from 35 to 60, physical standards had been lowered and the minimum salary, or starting rate, had been raised from \$1,500.00 to \$1,800.00 per annum, there were other obstacles to be reckoned with. Many men interested in appointment did not live in areas where vacancies existed and did not feel that the salary offered and the uncertainty of the period of employment justified moving. Some refused appointment because the salary was too low. Others were unable to obtain a release from employers.

State and deputy wardens are skilled technicians. They all use their homes as an operating base and patrol a designated area within a District. The nature of the work does not make it possible to give them constant supervision. Frequently they work under written or oral instructions without having contact with a superior. Primarily they are law enforcement officers, which in itself requires considerable training and experience to reach a reasonable degree of proficiency. Other duties are highly specialized and cover many fields. Even in normal times it is not possible to employ men skilled in all phases of the work. These skills are acquired only after a long period of training and experience. The absence of eight trained men, or 39% of the force of 23 full-time state and deputy wardens resulted in the curtailment of some activities.

By vote of the Board and approval of the State Personnel Department, Miss Edith A. Stoehr of Wethersfield, who had been employed on a part-time basis as a deputy warden since April, 1933, was given permanent full-time status as of September 1, 1943.

Wardens are required to do a considerable amount of traveling. During the biennium 1938-1940 the members of the warden service traveled 1,272,206 miles by automobile, or an average of 636,103 miles for each fiscal year.

At the beginning of the biennium gasoline was already being rationed. During periods of scarcity the gallonage allocated to this department was only sufficient to perform the most necessary duties. During these critical periods the State Police and some municipal police departments rendered invaluable assistance. These officers in the course of their work made investigations when they had reason to believe a fish or game law was being violated and during the biennium made a total of fifty-four arrests which came to our attention. Patrol by the wardens at times was limited to areas they could reach on foot, by public conveyance or in company with a state police officer.

During the first year of the biennium warden travel by automobile totaled 204,362 miles, a reduction of 68% of normal. In the second fiscal year travel by automobile totaled 271,873 miles, a reduction of 57% of normal. Although travel was substantially cut some of the cars now have high mileage records and many major overhaul jobs have been necessary. Tires have worn and many have been recapped more than once.

By very careful management and supervision the warden service has continued as an effective unit, has performed all necessary functions and has done its utmost to maintain a reasonably high level of general service.

**Arrests and Warnings.** Arrests by wardens for 1942-1944 totaled 230 with 195 or 85% convicted. Warnings for the same period totaled 589. The policy of education followed by the members of the war-

den service among the beginners in the field of hunting, fishing and trapping and the policy of reasonable leniency for the uninformed, unintentional violator is still in force, as is the policy of prosecuting deliberate, willful violators.

On page 95 there are tables of arrests by districts for each of the fiscal periods in the biennium.

**Bird Liberations.** All pheasant and quail liberations, as planned and directed by the Game Division, were made by the wardens. All cock pheasants were banded and a careful record made of the band numbers and the places of release. When it could be arranged all releases were witnessed by competent persons.

**Bird Crates.** All old, heavy and outmoded pheasant and quail crates used for transportation of birds on trailers were replaced by new light weight crates built by the wardens. They are of standard size and designed to carry birds in comfort for long periods of time when air temperatures are high. Birds shipped in this way are more alert and better able to take care of themselves when released in the wild. Tarpaulins have been purchased to give protection to the birds when they are being transported during inclement weather.

**Day-Old Pheasant Chicks.** During the biennium 5,310 day-old pheasant chicks were distributed by the wardens to cooperators throughout the state who raised them to the age of approximately 12 weeks and released them on land open to the public.

**Food Patches.** The wardens assisted in the Department-sponsored planting of food patches for birds by sportsmen and other groups. They also selected and purchased, as agents of the department, standing crops of grain. The Game Division also made funds available for the planting of several food patches where the entire cost was assumed by the department. The necessary contacts and field work for this program was done by the wardens.

**Game Bird Feed Stations.** During each year of the biennium wardens selected sites and erected approximately 700 bird feeding stations. In addition to these stations, many feeding hoppers were used. Sportsmen's clubs, other organized groups and many individuals cooperated in this program and built stations which they serviced. In some instances they also provided the grain, but in most cases the grain was furnished by the department. Travel restrictions required a revision of grain distribution methods. Formerly the wardens had visited each station or hopper once or twice a week depending on the severity of the weather and the number of birds using the stations. As the stations are widely scattered this required a great deal of travel. To meet the requirement of restricted travel, patrolmen were employed to take care of stations within a given area. This cut travel substantially.

**Assistance to Fish Division.** Assisting the Fish Division in the distribution of trout is a major annual activity requiring knowledge of the condition of the waters to be stocked, planning and labor.

During August and September, 1942, five wardens were assigned to make repairs to stream improvement installations on the Blackledge River under the direction of Fish Division personnel. While on this assignment they lived at a nearby farm.

Several investigations were conducted by wardens and recommendations made with reference to stocking of streams, lakes and ponds by the Department and in some instances by private interests, including sportsmen's groups.

Each year of the biennium approximately twenty-eight lakes and ponds were posted with spawning area buoys to warn sportsmen that angling was prohibited in the spawning bed areas.

**Pollution.** Pollution of good fishing streams by industrial waste has increased during the biennium. Investigation by this Department and the State Water Commission, which is charged with the enforcement of the pollution laws, usually determines the cause. In all possible cases necessary corrective measures were taken.

In streams the rapid dilution of chemicals injurious to fish makes it difficult to obtain samples and determine the source of the pollutant. A new method of investigating and reporting such matters has been agreed upon with the State Water Commission to speed up the investigating process which should produce better results.

**Obstructions to Streams.** The law prohibits, unless authorized by the Superintendent of this Department, the placing of any rack, screen, weir or other obstruction in any stream or at the outlet or inlet of any pond, which will prevent the passing of fish. Many dams had already been constructed without fishways on most streams in the state when this law was enacted. Through the years many dams have been removed by owners to eliminate maintenance costs and a great many more have been removed by flood water.

The intent of the law is to prevent future installations that do not provide for the passage of fish. Wardens must be alert for violations of any section of this law.

Before permits are issued authorizing the installation of any type of obstruction, investigations are made and reported to the Superintendent. Many requests which would affect the public interest are denied.

**Private Waters.** Private water is defined in the law as follows: "Private waters shall mean a natural or artificial pond or lake to which the owner not a corporation, partnership or voluntary association, has exclusive right of access, of which water supply all sources

are located substantially within the property of the owner, to which fish do not have access from waters not under the control of such owner or from waters stocked at the expense of the state." The owner of such water is entitled to special privileges with reference to the taking of fish therefrom provided the lake or pond is registered with this Department. This requires an investigation to determine eligibility. Several investigations of this nature are made each year.

**Marine Patrol.** As directed by law the Department assigned five wardens to Marine Patrol from July 1 to September 15 each year of the biennium. It was necessary during this assignment for some of the wardens to work in both the marine and inland districts due to personnel shortage.

At the request of the Marine Warden in September, 1942 the inland wardens west of the Connecticut River started collecting egg-bearing lobsters from commercial fishermen and recorded data showing from whom collected, the number of lobsters and their weight. They were then punch-marked and returned to the water for hatching. This plan reduced the travel of the Marine Warden very substantially and saved a considerable amount of gasoline and rubber.

**Regulated Hunting and Fishing.** All hunting areas and streams, lakes and ponds under the control of the Department such as State-owned, including State forests, State-leased and lands and waters where the owners by written agreement have authorized the Department to manage and control hunting and fishing, are classified as regulated. Regulations made by the Board are in effect on all such lands and waters.

The obtaining and renewal of leases and agreements is one of the major functions of the members of the warden service. The expansion of hunting areas, the extension of stream mileage and the acquisition of fishing rights on additional streams, lakes and ponds is constantly under consideration and where possible, leases or agreements are executed.

Expansion of the regulated hunting and fishing program has resulted in additional responsibilities, especially increased landowner contacts, distribution of permits, the checking of water levels and temperatures, stocking, patrol, posting and preparation of maps. Also to be considered is the maintenance of rights-of-way, automobile parking areas and other conveniences maintained by the Department for the sportsmen and others who use them.

In some instances the additional duties are in part absorbed by patrolmen, but these men are employed on a per diem basis for a limited number of days during the hunting and fishing seasons. The work that is not done by the patrolmen must be performed by the wardens.

Of the fifty-eight lakes and ponds listed as being under regulation by the Department in 1944, only five were covered by patrolmen.

Candlewood Lake is not under regulation, but due to its size a patrolman is employed on this lake for the purpose of maintaining fish and game laws. The remaining fifty-three lakes and ponds under regulation were covered by the wardens.

Of the forty-three streams listed as being under regulation by the Department in 1944 only 25 were patrolled by patrolmen and the other eighteen were covered by the wardens.

During the biennium the following areas were managed and regulated for hunting by the Department: Thirty Permit-Required areas, thirteen State-owned or leased areas and twenty-two State forests, or a total of sixty-five areas. They were patrolled as follows:

<i>Permit-Required Areas</i>	<i>State-owned or leased areas</i>	<i>State Forests</i>
28 by patrolmen	8 by patrolmen	None by patrolmen
2 by wardens	5 by wardens	22 by wardens

In addition to the hunting areas, lakes, ponds and streams under regulation there are hundreds of lakes and ponds and many miles of streams and thousands of acres of land open to public hunting and fishing. These open lands and waters do not receive adequate patrol but do get as much attention as can be given by the present small full-time force.

**Shad Fishing.** The most intensively fished spot in the state is the shad fishing area at the Enfield Dam in the Town of Suffield. Through the courtesy and cooperation of The Windsor Locks Canal Company, a subsidiary of The Connecticut Light and Power Company this location has remained open to public use under the regulations and supervision of this department.

The Enfield Dam temporarily impedes the migration of shad although there is an adequate fishway in the dam. Enterprising anglers discovered a lure the shad would strike and the news spread rapidly. So many people of both sexes and of all ages descended upon the limited area that could be fished with safety and traffic became so tangled on the narrow dirt road leading to the canal lock that measures for control had to be taken. This Department responded by leasing a field for the purpose of parking cars and, with representatives of The Windsor Locks Canal Company, agreed upon a right-of-way on the area of the company property that could be used by the public. The Department has also provided toilet facilities.

It has been necessary to restrict the area to licensed anglers only, limit the hours of fishing and employ two patrolmen so the area would have constant supervision during the hours fishing is permitted, which was from 9:00 A.M. to 9:00 P.M., from April 15 to June 30, or in some seasons to July 15. The early fishing is best as the shad are then fresh from the sea, have not deposited their roe, are firm and full of fight. As they have a soft mouth they are not usually taken unless firmly hooked or carefully handled.

Year	Anglers	Hours Fished	Shad Caught	Hours per Shad
1941 .....	3,449	10,190	6,859	1.60
1942 .....	5,172	15,472	5,395	2.86
1943 .....	2,340	8,033	6,519	1.23
1944 .....	5,110	18,917	9,730	1.95

**Duck Hunting Blinds.** During the summer of 1943 the wardens constructed twenty duck hunting blinds, each large enough to accommodate three gunners. Fourteen of these were on State-owned portions of Great Island and six on State-owned land at Lord's Cove. Additional blinds of various types will be constructed for the convenience of the hunters using these two popular duck hunting locations. None of these blinds are reserved nor are permits required for their use.

When the Army Air Forces took over Hammonasset for the purpose of air to ground gunnery practice the officers in charge prohibited duck hunting along the west bank of the Hammonasset River on property owned by the State Park Department. In 1943 this Department obtained the consent of the Air Forces to permit duck hunting from State-owned blinds at this location when gunnery practice was not taking place. Wardens constructed six blinds and hunting was allowed in 1943 under a permit system administered by Air Forces personnel located at Hammonasset Beach.

During the biennium the parcel of land located at the southerly end of the Smith Neck Road in Old Lyme purchased by this Department a few years ago for use as a right-of-way to Great Island has been partially cleared to provide temporary parking space. An old houseboat that has been beached on this property reduced the space available for parking. It was dismantled and removed. The parking area and dock facilities installed at this location for public use have proved a welcome convenience and have been extensively used.

**General Service.** Members of the warden service are equipped by the State Forestry Department with Indian Fire Pumps for combating forest fires and whenever possible such assistance is given.

Limited control of predaceous animals has been maintained by wardens, trappers and sportsmen. There has been an apparent increase in the fox population throughout the state. Several wardens own fox hounds and hunt fox for sport. Due to numerous complaints received with reference to the increase of fox and the alleged damage being done by them the wardens were requested to organize fox hunts as a control measure. Sportsmen responded and many such hunts were held.

Snapping turtles were trapped from selected waters where concentrations were known to exist and from other places as a result of complaints. Many traps were also loaned to individuals for this purpose.

The usual number of complaints were received concerning damage to homes and other buildings by squirrels and birds, damage to victory and regular truck gardens by rabbits and birds and nuisances committed by skunks, pigeons and starlings. Where trapping was possible this was done, but satisfactory, legal methods for successfully treating all such complaints have not been developed.

Complaints from rural landowners with reference to jacklighting for deer on their property have decreased. This may be partly due to the present liberalized law authorizing the taking of deer by persons holding permits issued by this Department. During the period when the meat shortage was most critical there were a few outbreaks of above average proportions. These complaints were swiftly dealt with by the wardens and in many cases by the State Police.

Under the present law licensed hunters may hunt deer legally and should do so rather than expose themselves to arrest, prosecution and the loss of future hunting privileges.

As the wardens act as field representatives for all divisions of the department they are required to furnish written data on a host of subjects. A considerable amount of writing is also necessary to meet the requirements of other state departments and agencies. In an effort to reduce the amount of writing several forms were entirely eliminated and new forms were designed to require answers to specific questions, thus eliminating lengthy explanations. Reports providing the department with statistical data were revised to simplify the recording of same by field workers and compiling by the office staff.

**Educational Activities.** Members of the warden service have appeared before many groups interested in wildlife conservation to explain Department programs and policies and to disseminate information of an instructive and educational nature.

On invitation of Commissioner Edward J. Hickey of the State Police Department the Chief of this division and a state warden lectured at four refresher courses at the State Police Training Academy during January, 1944. A total of 177 state policemen were addressed on the subjects of fish and game laws, regulations, policies and procedures of this Department and humane methods for disposing of wounded animals and the dressing and care of wildlife, especially deer accidentally killed by automobiles and other causes. The interest and response of the officers was most gratifying.

In 1942 the Chief of this division served as vice-president, and in 1943 as president, of the Conservation Law Enforcement Chiefs Association. This is a regional organization composed of the chief conservation officers of nineteen states from Maine to Virginia and west to and including Ohio. The 1943 meeting of the association was held at Hartford, Connecticut and was well attended. The purpose of the association is to have an interchange of expression on

mutual problems, especially law enforcement. Many other matters relating to field work in connection with wildlife conservation are discussed and helpful suggestions made.

**Civilian Defense.** At the inception of organized civilian defense all members of the Department were urged to volunteer their services locally and most of them did so. Wardens volunteered as auxiliary policemen, air raid wardens and aircraft spotters and are still serving when needed.

At the request of the Director of Emergency Services, State War Council, a flying squadron was organized for the purpose of despatch to any section of the state where their services could supplement state and local organizations. It was felt such a squadron could be particularly effective on water because of the experience of the wardens and since their standard equipment includes trailers, boats and outboard motors. They could serve elsewhere, if needed, as they are also equipped with axe, shovel, block and tackle, rope, chains, first aid kits and many other articles that could be used in an emergency. Their ability to serve usefully in emergencies was demonstrated during the hurricane and flood in 1938 and the collapse of the new bridge at Hartford.

**Conclusion.** Sincere appreciation is extended to the landowners, sportsmen and state and municipal departments that cooperated so splendidly with the wardens during the difficult two-year period covered by this report.

Acknowledgment is also made of the many letters of appreciation and commendation received from sportsmen, landowners and others interested in wildlife conservation.

Future efforts will be directed toward progressive and constructive programs and a sympathetic understanding of the wishes and problems of the landowners who open their property to public use, and the sportsmen who go afield with rod, gun and dog in pursuit of sport and recreation.

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1942 to June 30, 1943

In addition, 25 arrests were made by State Police and other Police Officers.

District	Fish Law Arrests	Game Law Arrests	Total Arrests	Total Convictions	Percentage of Convictions	Fines Paid	Costs Paid	Total Fines and Costs
No. 1 Litchfield .....	10	17	*27	21	77½%	\$306.00	\$165.51	\$ 471.51
No. 2 Hartford .....	2	11	13	13	100 %	92.00	83.76	175.76
No. 3 New Haven .....	4	8	12	10	83 %	67.00	85.91	152.91
No. 4 Fairfield .....	2	3	5	5	100 %	32.00	41.12	73.12
No. 5 Tolland .....	1	3	4	4	100 %	21.00	29.50	50.50
No. 6 Windham .....	1	22	23	12	52 %	23.00	120.90	143.90
No. 7 New London .....	—	1	1	1	100 %	25.00	14.06	39.06
No. 8 Middlesex .....	3	20	23	23	100 %	181.00	137.23	318.23
Marine .....	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
TOTALS .....	23	85	*108	89	82 %	\$747.00	\$677.99	\$1,424.99

\*Includes 3 pending cases.

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1943 to June 30, 1944

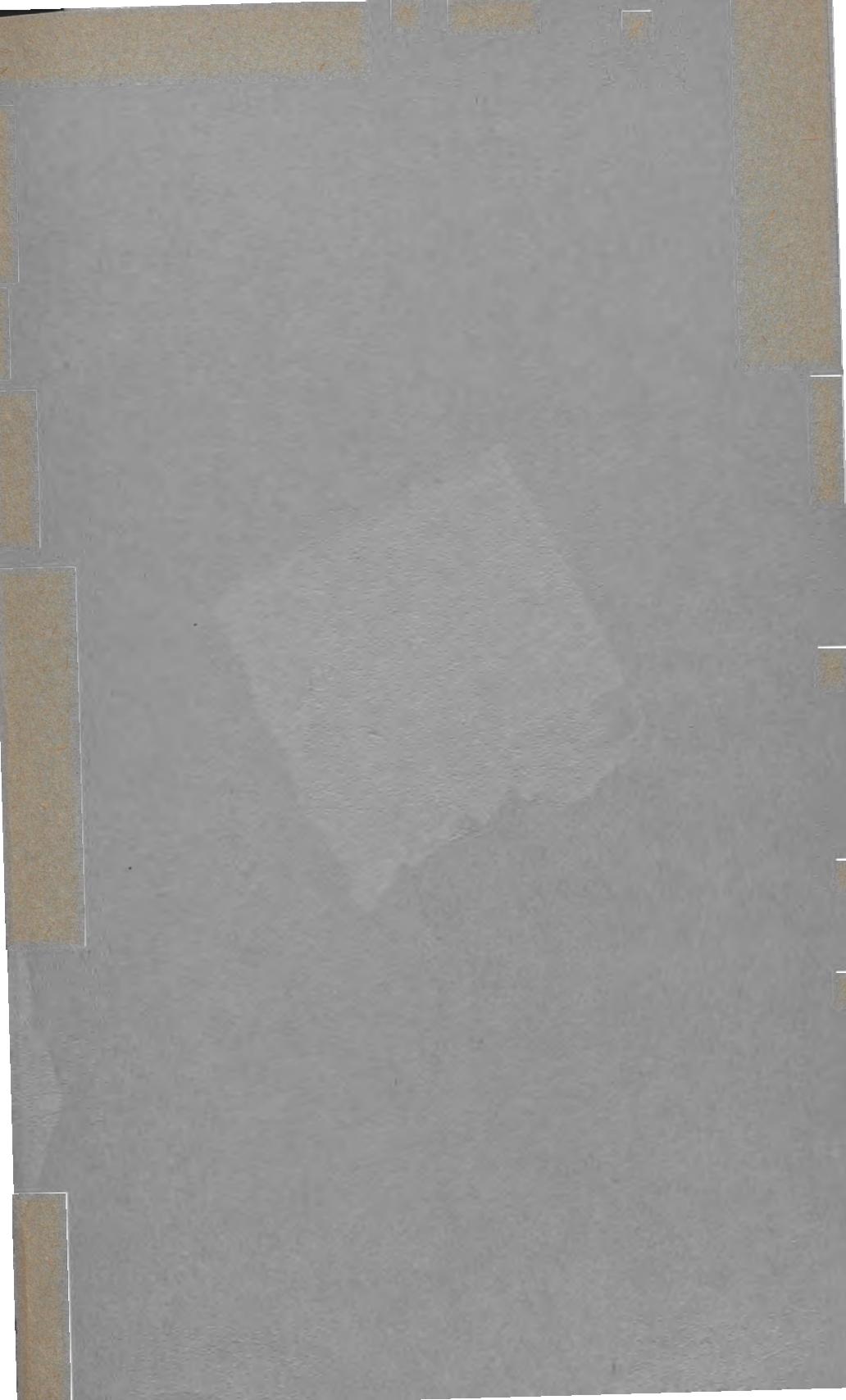
In addition, 29 arrests were made by State Police and other Police Officers.

District	Fish Law Arrests	Game Law Arrests	Total Arrests	Total Convictions	Percentage of Convictions	Fines Paid	Costs Paid	Total Fines and Costs
No. 1 Litchfield .....	1	17	18	17	94 %	\$ 559.00	\$ 82.52	\$ 641.52
No. 2 Hartford .....	9	7	16	12	75 %	165.00	49.70	214.70
No. 3 New Haven .....	6	17	23	21	91 %	298.00	63.86	361.86
No. 4 Fairfield .....	1	4	5	5	100 %	82.50	14.00	96.50
No. 5 Tolland .....	—	7	7	6	85½%	26.00	29.20	55.20
No. 6 Windham .....	1	20	21	21	100 %	418.00	105.50	523.50
No. 7 New London .....	3	9	12	7	58 %	101.00	31.00	132.00
No. 8 Middlesex .....	—	14	**14	11	78½%	166.00	46.46	212.46
Marine .....	6	—	6	6	100 %	45.00	—	45.00
—	—	—	—	—	—	—	—	—
TOTAL .....	27	95	**122	106	87 %	\$1,860.50	\$422.24	\$2,282.74

\*As of January 1, 1944 costs are no longer imposed.

\*\*Includes 1 pending case.







*State of Connecticut*  
PUBLIC DOCUMENT No. 19

**TWENTY-SIXTH BIENNIAL REPORT**  
*OF THE*  
**CONNECTICUT STATE BOARD**  
**OF FISHERIES AND GAME**

*FOR THE YEARS*  
**1944-1946**

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**TWENTY-SIXTH BIENNIAL REPORT**

*OF THE*

**CONNECTICUT STATE BOARD  
OF FISHERIES AND GAME**

*FOR THE YEARS*

**1944-1946**

HARTFORD

PUBLISHED BY THE STATE

Printed under authority of Section 142,  
General Statutes of Connecticut, Revision of  
1930, as amended by Section 45e, Supplement  
of 1939.

FRED R. ZELLER,  
*State Comptroller.*

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November 12, 1946.

The Honorable Raymond E. Baldwin  
Governor of Connecticut  
Hartford, Connecticut

Sir:

The Commissioners of the State Board of Fisheries and Game respectfully submit herewith the twenty-sixth Biennial Report of the activities of this Department.

The Department has passed through a difficult period during the war years due to shortages of personnel, materials and equipment. It has maintained its routine activities but has not been able to expand its programs, to replace outmoded equipment and to make major improvements in its hatchery plants.

With a view to correcting this situation, the Department has developed a post-war program. This program was presented at a hearing before the Legislative Council and has received a favorable report from that body. It has also received the endorsement of the Advisory Council and the State League of Sportsmen's Clubs. A special bill requesting an appropriation from the General Fund of approximately one million dollars will be presented to the General Assembly.

This appropriation, if granted, will permit this Department to provide additional rearing sites for larger production of fish, to increase the supply of game by improvement to game covers, to improve its present plant facilities, and to provide for increased use of public recreation areas.

This Commission has long felt the need for additional rearing plants for the production of trout. It now seems possible that the long-continued search for a site with an adequate water supply will result in the acquisition of a suitable station before the end of the year. A considerable sum of money will be required to develop this site and provide for a headquarters building and equipment.

As predicted in the twenty-fifth Biennial Report of the Department, the number of license holders during the year 1946 will be approximately 50% greater than during the war years. This increase in the number of anglers and hunters has resulted in an unprecedented drain on the wildlife resources of the state and in an insistent demand by the public for heavier fish and game stocking and additional law enforcement facilities.

To meet this demand and to furnish good fishing and hunting for the large and growing population of anglers and hunters, the Board has presented a budget for the next biennium providing for the financing of all departmental activities except the purchase of fish and game from General Fund appropriations. The fish and game funds

resulting from license fees under this plan would be earmarked exclusively for the purchase of fish and game and food for fish and game.

The adoption of this program is urged by the Board and it is hoped that unanimous support will be given to it by the General Assembly. If Connecticut is to maintain its present important position in the industrial field, increasing attention must be given to the proper provision of outdoor recreation areas available for the use of all its citizens. There is a further obligation on the part of the State to arrange for public education in the conservation and proper use of all natural resources, including those of the soil, of water and of wildlife.

The Board wishes to express its indebtedness to the members of the various State Departments, who have cooperated in carrying out many of the programs and projects of this Department. Special mention should be made of the Highway Department and the Park and Forest Departments. Others, too numerous to list here, have rendered valuable aid in specialized fields. The departments under the Finance Commissioners, from the nature of their close association with our work, have been particularly helpful. The sportsmen's clubs have rendered a real service in their participation in the rearing and distribution of pheasants, the management of shooting and fishing areas, and in their efforts to promote a better relation between the land-owners and sportsmen.

Our thanks are due to the employees of the department for their valuable services rendered during the biennium. We wish particularly to welcome back to civilian life the many employees, whose names were published on the honor roll of the department, for service in the armed forces. To the families of those who will return no more, we offer our most sincere sympathy and express the gratitude of our people for their sacrifice.

Respectfully submitted,

JOHN E. FLAHERTY, M.D., Chairman,  
PHILIP C. BARNEY,  
FRANCIS L. SHEANE.

The Commissioners,  
State Board of Fisheries and Game  
State Office Building, Hartford, Connecticut.

Gentlemen:

I have the honor to submit herewith a report on the activities of this Department for the biennial period ending June 30, 1946.

Respectfully,

RUSSELL P. HUNTER, Superintendent.



## BIENNIAL REPORT

1944-46

### Administration

**Budgets.** For the biennium 1945-47, the Department requested an appropriation from the General Fund of \$435,830 to finance administrative costs, the land and water acquisition program, the marine fisheries program, a part of the law enforcement program and capital outlay amounting to approximately \$160,000 to cover major improvements to Department-owned properties.

The Budget Division recommended an appropriation of \$200,000 for the biennium, a reduction of over fifty per cent.

The Appropriations Committee recommended an increase of approximately \$49,000 over the recommendations of the Budget Division—\$40,000 to provide for the financing of patrol service on fishing and hunting areas under control of the Department and \$8,985 for additional equipment, the construction of additional pools at the Burlington Hatchery and development of a parking area at Crystal Lake.

For the biennium 1947-49, the Department is presenting a budget requesting an appropriation from the General Fund of \$716,725 to finance all departmental expenditures except the purchase of fish and game and the purchase of food for fish and game. If this budget is approved, the fish and game funds will be used exclusively for the purchase of fish and game and for food for feeding fish and birds.

**Post-War Program.** In addition to the appropriation mentioned above, the Department will introduce a bill requesting a special appropriation of about one million dollars to finance a post-war program.

Details of this program will be discussed in the reports of the Game, Fish and Law Enforcement Divisions which follow.

The purpose of this program in general is to increase the supply of fish and game in the state through the improvement of fish and game habitats, the expansion of plant facilities and the increase of enforcement activities.

**Finances.** During the fiscal year 1945-46 the income from the sale of angling licenses was \$203,886, an increase of about \$56,000 over that of the previous high year 1944-45. The income from the sale of hunting licenses, which had dropped considerably during the war years, was approximately \$124,000, or about \$2,000 higher than the previous high year 1942-43.

The increase in the number of anglers in the field in the Spring of 1946 is approximately fifty per cent—when the number of servicemen who were issued free renewal license privileges is included.

It is anticipated that there will be a similar increase in the number of hunters afield.

These increases point up the need for more intensive stocking of fish and game, provision of more hunting and fishing areas, and provision of additional warden personnel.

With the increase in the sale of angling licenses and the resulting large cash balance in the Inland Fish Fund on June 30, 1946, the Board felt that it was justified in requesting an increase of eight men in the warden staff whose services and expenses would be financed exclusively from the Inland Fish Fund for at least one year.

Approval of this request was granted by the Finance Advisory Committee and the Personnel Board.

The income from the sale of hunting and angling licenses and from miscellaneous receipts credited to the Fish and Game Funds for the past nine years was as follows:

	<i>Inland Fish Fund</i>	<i>Game Fund</i>
1937-38	\$115,909.28	\$ 88,012.03
1938-39	105,182.25	81,759.80
1939-40	106,393.81	95,657.16
1940-41	116,645.43	97,228.51
1941-42	135,708.33	119,914.87
1942-43	134,022.15	122,165.20
1943-44	134,294.74	105,131.26
1944-45	147,346.81	107,526.27
1945-46	203,886.12	123,925.99

**Personnel.** The following members of the staff who served in the Armed Forces during World War II have returned to their employment with the Department: Wardens Donald N. Deane, Roland Hotchkiss, Alfred J. Hunyadi, Steve J. Muska and Charles H. Wells, Game Management Technicians Oliver E. Beckley, Jr., Norman G. Wilder and Leslie A. Williamson, Game Management Supervisor Arroll L. Lamson, Fish Culturist Robert V. O'Brien, Aquatic Biologist Lyle M. Thorpe, Fish Hatchery Foreman Charles L. Rogers, Harding F. Joray, State Warden, will return on October first.

On January 31, 1945 Roy H. Eno, who served the Department as Mail and Supply Clerk, was officially reported as killed in action somewhere in Austria. Thomas J. McCarroll, who served as Mail and Supply Clerk previous to the employment of Mr. Eno, was killed in an automobile accident shortly after his discharge from the Army.

**Advisory Council.** An organization of sixteen sportsmen—two from each county—known as the Advisory Council meets with the Board and staff members once a month in an advisory capacity. Its purpose is to improve and expand contacts between the Board and the sportsmen of the state.

A list of the present members follows:

*President*—GEORGE GANEM

*Vice-President*—GEORGE JONES

**Hartford County**

<sup>1</sup>Kenneth Adam, Wethersfield

<sup>2</sup>Arthur Bissell, Suffield

**New Haven County**

Wooster Canfield, Waterbury

<sup>3</sup>Fred Kingsbury, Hamden

**New London County**

Pierre Theve, Norwich

Leon Bascom, Waterford

**Fairfield County**

<sup>4</sup>Frederick A. Carley, Danbury

George E. Jones, Norwalk

**Windham County**

Louis B. Tenney, North Windham

<sup>5</sup>Leon S. Robbins, Thompson

**Litchfield County**

George J. Ganem, Torrington

Robert L. Sullivan, New Milford

**Middlesex County**

Stanley Atwell, Middletown

<sup>6</sup>Albert Santi, Ivoryton

**Tolland County**

Raymond I. Longley, Stafford Springs

<sup>7</sup>Kenneth Little, Rockville

<sup>1</sup> Replacing Merritt W. Treat.

<sup>2</sup> Replacing Ernest Clark.

<sup>3</sup> Replacing Karl W. Reynolds.

<sup>4</sup> Replacing Arthur J. Hurley.

<sup>5</sup> Replacing William R. Ware.

<sup>6</sup> Replacing Stanley Warner.

<sup>7</sup> Replacing Thomas F. Rady.

**Land and Water Acquisition.** During the biennium the Commission on Forests and Wildlife has acquired 660 acres of land and water areas for administration by this Board. The bulk of the land is duck marsh including 12½ acres at Great Island, Old Lyme, 438 acres at Barn Island, Stonington, and 75 acres at Great Harbor, Guilford. A total of 534 acres has been added to the public duck hunting areas of the State at a cost of \$22,390.

The Forest and Wildlife Commission has also acquired two rights of way and parking areas, one at Crystal Lake, Ellington and one at Tyler Lake, Goshen.

To protect the watersheds, 30 acres of land have been acquired at the Burlington Trout Hatchery and 10 acres of land at the Windsor Locks Hatchery.

For the benefit of the fishermen, one pond of 30 acres, known as Dodge Pond, in the town of Niantic has been acquired and 1½ miles of Roaring Brook in the town of Stafford.

For the past several months an intensive search for an adequate water supply for trout rearing facilities has been undertaken and it is anticipated that within the next few months a suitable area will have been acquired for this important use.

**Personnel—Administrative Staff**

Mildred K. Bartle, Executive Assistant

Rose Sharfman, Clerk

Roger Norling, Accountant Auditor

Faith F. Crocker, Stenographer

Nancy Corbett, Typist

Katherine Kane, Typist

Lillian Brewster, Clerk

Florence Bagnall, Typist

Robert McComb, Clerk

## Financial Statement

July 1, 1944—June 30, 1946

### MEANS OF FINANCING

#### Working Balances

	1944-45	1945-46
Game Fund .....	\$ 31,623.60	\$ 27,662.23
Inland Fish Fund .....	75,842.70	76,188.70
Marine Fish Fund .....	1,844.00	2,205.94

#### Receipts from Sale of Hunting and Angling Licenses and Other Sources

Game Fund .....	107,526.27	123,925.99
Inland Fish Fund .....	147,346.81	204,253.62
Marine Fish Fund .....	3,881.41	5,178.36
Appropriation from General Fund .....	73,298.00	135,879.00

Total Cash Resources .....	\$441,362.79	\$575,293.84
----------------------------	--------------	--------------

### EXPENDITURES

#### GENERAL FUND

#### Division of Administration

Personal Services .....	\$ 22,611.20	\$ 24,364.53
Expenses of Board and Advisory Council .....	1,203.19	590.21
Expenses of Superintendent .....	509.65	501.73
Expenses of Office .....	3,278.07	4,696.78
	\$ 27,602.11	\$ 30,153.25

#### Land and Water Acquisition Program

Lease renewals, posters, etc. ....	\$ 11,104.36	\$ 10,336.71
Patrol Service .....	.....	15,588.83
	\$ 11,104.36	\$ 25,925.54

#### Division of Marine Fisheries

Supervision .....	\$ 2,160.00	\$ 2,160.00
Lobster Restoration .....	8,364.23	9,081.40
Purchase of egg-bearing lobsters .....	3,146.93	1,795.05
Biological Studies .....	511.29	2,220.67
Miscellaneous .....	.....	1,106.97

Division of Law Enforcement .....	\$ 12,844.01	\$ 11,168.46
-----------------------------------	--------------	--------------

#### Capital Outlay

Structural Replacements .....	3,761.20	2,143.23
New Structures .....	.....	4,322.24
Land and Nonstructural Improvements to Land .....	.....	3,783.40

Total Expenditures .....	\$ 69,494.13	\$ 93,860.21
--------------------------	--------------	--------------

## GAME FUND

	1944-45	1945-46
<b>Division of Game Restoration</b>		
Supervision .....	\$ 4,315.66	\$ 5,412.70
Game Restoration .....	67,714.60	79,573.59
Pittman-Robertson Projects .....	4,703.79	7,623.08
Game Sanctuaries .....	170.82	.....
Cooperative agreement with University of Connecticut .....	.....	1,230.00
	<hr/> \$ 76,904.87	<hr/> \$ 93,839.37
<b>Division of Law Enforcement</b>		
Warden Service .....	\$ 25,762.50	\$ 31,336.38
Patrol Service on regulated hunting areas ....	6,926.00	.....
	<hr/> \$ 32,688.50	<hr/> \$ 31,336.38
Maintenance of properties .....	\$ 155.62	\$ 800.82
Licenses and frames .....	1,705.15	1,973.96
Servicemen's Refunds .....	.....	382.00
Miscellaneous .....	33.50	478.79
<b>Total Expenditures—Game Fund</b> .....	<hr/> \$111,487.64	<hr/> \$128,811.32

## INLAND FISH FUND

<b>Division of Inland Fisheries</b>		
Supervision .....	\$ 5,540.75	\$ 6,495.76
Trout and Pond Fish Restoration .....	90,135.67	88,521.93
Fisheries Management .....	3,172.37	8,334.16
Maintenance of Boats .....	64.04	118.18
Maintenance of Properties .....	6,594.58	540.00
Miscellaneous .....	60.25	853.15
<b>Division of Law Enforcement</b>		
Warden Service .....	\$ 28,023.48	\$ 34,929.27
Patrol Service on state-regulated fishing waters	7,921.84	.....
Servicemen's Refunds .....	.....	210.00
Licenses and frames .....	1,707.51	2,282.70
Insurance .....	1,667.82	50.00
Capital Expenditures .....	2,112.50	.....
<b>Total Expenditures—Inland Fish Fund</b> .....	<hr/> \$147,000.81	<hr/> \$142,335.15

## MARINE FISH FUND

Marine Law Enforcement .....	\$ 3,323.47	\$ 3,439.06
Miscellaneous .....	196.00	.....
	<hr/> \$ 3,519.47	<hr/> \$ 3,439.06
<b>Total Expenditures</b>		
Game Fund .....	\$111,487.64	\$128,811.32
Fish Fund .....	147,000.81	142,335.15
Marine Fund .....	3,519.47	3,439.06
General Fund .....	69,494.13	93,860.21
	<hr/> \$331,502.05	<hr/> \$368,445.74

	1944-45	1945-46
Reverted to Treasury .....	\$ 3,803.87	\$ 6,824.46
<b>Cash Reserves</b>		
Game Fund .....	27,662.23	22,776.90
Fish Fund .....	76,188.70	138,107.17
Marine Fund .....	2,205.94	3,945.24
<b>Balance of General Fund Appropriation Available for Expenditures in 1946-47 .....</b>	<b>.....</b>	<b>35,194.33</b>
	<u>\$441,362.79</u>	<u>\$575,293.84</u>

SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1944

County	Resident Angling (\$3.00)	Resident Hunting (\$3.00)	Resident Combination (\$5.00)	Resident Trapping and Hunting (\$5.00)	Resident Trapping (\$3.00)	Resident Trapping (Minors) (\$1.00)	*Special Combination (\$7.00)	Nonresident Angling (\$5.00)	Nonresident Property Owner Angling (\$3.00)	Nonresident Hunting (\$10.00)	Nonresident Property Owner Hunting (\$3.00)	Nonresident Combination (\$14.00)	Nonresident Property Owner Combination (\$5.00)	Alien Angling (\$5.00)	Alien Property Owner Angling (\$3.00)	Resident Temporary Angling (\$1.00)†	Nonresident Temporary Angling (\$1.50)†	**Special (free)	Total Revenue
Hartford ...	11,199	4,794	3,428	125	120	228	104	102	14	35	4	1	1	83	37	161	66	1,505	\$ 68,803.10
New Haven.	6,643	4,895	2,249	96	67	106	54	45	7	15	6	0	6	52	32	59	53	1,159	47,982.60
New London	2,296	1,809	820	71	46	60	52	64	17	18	16	2	4	14	13	10	64	529	18,199.25
Fairfield ...	4,348	4,189	1,684	78	60	158	55	249	22	32	4	0	7	31	14	75	164	965	37,426.95
Windham ..	1,861	895	712	59	48	57	58	164	9	40	6	5	9	20	22	20	40	449	14,361.50
Litchfield ..	4,388	1,579	1,566	79	50	78	81	318	53	19	8	8	6	15	20	100	314	856	29,777.90
Middlesex ..	1,131	1,087	601	82	74	75	42	33	8	18	2	0	1	3	6	13	38	333	11,152.75
Tolland ....	1,540	629	626	34	30	51	38	71	18	15	2	3	1	13	6	14	60	325	11,015.20
Office .....	....	....	....	....	....	....	....	21	....	6	..	..	..	..	..	..	6	..	179.95
Totals .....	33,406	19,877	11,686	624	495	813	484	1,067	148	198	48	21	35	231	150	452	805	6,121	.....
Revenue ...	\$100,218	\$59,631	\$58,430	\$3,120	\$1,485	\$813	\$3,388	\$5,430.70	\$444	\$1,980	\$144	\$294	\$175	\$1,155	\$450	\$452	\$1,207.50		\$238,899.20

\* Resident Hunting, trapping and angling.

\*\* For residents over sixty-five years of age. Issued on payment of recording fee only. This license is issued for hunting, angling or combination hunting and angling privileges.

† Issued only during last six months of year.

In addition: 14 resident one-day hunting licenses; 16 nonresident one-day hunting licenses and; 10 nonresident fox hunting licenses were issued. (Receipts \$82.00) Included in above grand total.

SUMMARY

	Number Issued	Total Income	Average Yield per License to Department
Total number of licensed anglers (all types) .....	54,606	\$139,935.70	\$2.60
Total number of licensed hunters (all types) .....	39,134	93,975.50	2.40
Total number of licensed trappers (all types) .....	2,416	4,988.00	2.06
<b>TOTAL .....</b>	<b>96,156</b>	<b>\$238,899.20</b>	<b>\$2.48</b>

**SUMMARY OF ANGLING AND HUNTING LICENSES  
ISSUED FOR THE YEAR 1945**

County	Resident Angling (\$3.00)	Resident Hunting (\$3.00)	Resident Combination (\$5.00)	Resident Trapping and Hunting (\$5.00)	Resident Trapping (\$3.00)	Resident Trapping (Minors) (\$1.00)	* Special Combination (\$7.00)	Nonresident Angling (\$5.00)	Nonresident Property Owner Angling (\$3.00)	Nonresident Hunting (\$10.00)	Nonresident Property Owner Hunting (\$3.00)	Nonresident Combination (\$14.00)	Nonresident Property Owner Combination (\$5.00)	Alien Angling (\$5.00)	Alien Property Owner Angling (\$3.00)	Resident Temporary Angling (\$1.00)†	Nonresident Temporary Angling (\$1.50)†	** Special (free)	Total Revenue
Hartford ...	13,411	5,021	4,059	131	131	239	99	161	23	33	6	3	2	76	37	93	95	1,775	\$ 76,203.50
New Haven..	7,771	5,081	2,665	86	74	118	59	50	8	17	5	..	7	41	23	42	55	1,312	52,249.95
New London	2,611	1,712	1,071	67	51	44	61	68	24	29	11	3	3	15	14	8	64	563	19,641.15
Fairfield ...	5,326	4,545	1,991	92	78	120	60	283	39	40	5	3	11	20	13	66	154	1,124	41,511.45
Windham ...	2,144	886	834	49	46	50	71	194	18	46	8	12	10	21	25	10	49	457	15,578.60
Litchfield ..	5,699	1,520	1,807	64	57	69	78	369	86	17	5	9	4	13	19	65	363	948	32,700.10
Middlesex ..	1,254	1,164	668	80	82	75	57	50	7	13	3	1	0	3	5	13	48	364	11,932.85
Tolland .....	1,871	593	705	30	25	34	51	96	15	9	6	7	2	8	14	14	72	348	11,860.65
Office .....	....	....	....	....	....	....	....	19	....	1	..	..	..	..	..	..	1	..	108.45
Totals .....	40,087	20,522	13,800	599	544	749	536	1,290	220	205	49	38	39	200	150	311	901	6,891	.....
Revenue ...	\$108,691 <sup>1</sup>	\$61,566 <sup>2</sup>	\$68,992	\$2,995	\$1,632	\$749	\$3,752	\$6,563.20	\$660	\$2,050	\$147	\$532	\$195	\$1,000	\$450	\$311	\$1,351.50	....	\$261,786.70

\* Resident Hunting, trapping and angling.

\*\* For residents over sixty-five years of age. Issued on payment of recording fee only. This license is issued for hunting and angling.

† Issued only during last six months of year.

In addition: 8 resident one-day hunting licenses.

36 nonresident one-day hunting licenses; and

17 nonresident fox hunting licenses were issued. (Receipts \$150)

**SUMMARY**

	Number Issued	Total Income	Average Yield per License to Department
Total Number of licensed anglers (all types) .....	64,463	\$155,136.20	\$2.41
Total Number of licensed hunters (all types) .....	42,740	101,520.00	2.38
Total Number of licensed trappers (all types) .....	2,428	5,130.50	2.11
<b>TOTAL .....</b>	<b>109,631</b>	<b>\$261,786.70</b>	<b>\$2.38</b>

<sup>1</sup> Includes 5,785 resident angling licenses issued to women at \$1.00.

<sup>2</sup> Includes 5 resident combination licenses issued to women at \$4.00.

## Division of Game Restoration

In addition to the regular activities of the Game Division—(1) operation of State-regulated hunting areas, (2) the annual game stocking program, and (3) the Pittman-Robertson projects, an expanded post-war program has been planned as outlined below.

Following this description of post-war projects will be found tables summarizing the activities of the Division for the biennium 1944-46.

### Hunting Grounds, Project I

The constant expansion of industry and suburban development in Connecticut makes for an ever-increasing problem of "where to hunt."

The Department's shooting ground system at present is made up of the following:

State Forest (State-owned) .....	109,000	Acres
State-leased .....	55,000	"
State-regulated (Cooperative agreements) .....	160,000	"
State-owned Marshes .....	1,800	"
	325,800	"

This post-war project calls for the leasing of 50,000 acres for 10 years at a total cost of \$50,000. Two such leased areas totaling twelve to fifteen thousand acres are urgently needed for the New Haven and Waterbury sportsmen. The remainder of the funds would be spent in the eastern half of the state where covers are suitable and private or closed club interests are not a problem.

### Waterford Marsh Purchase and Restoration, Project II

Connecticut marshes along Long Island Sound and those bordering the Connecticut River total approximately 18,000 acres. During the years 1933-38 better than 90% of these marshes were drained, through Federal and State funds, as a means of mosquito control. This drainage completely destroyed the value of these marshes for waterfowl. Studies under way on two State-owned marshes indicate that shallow flooding with constant water levels by means of low dikes, creates desirable conditions for waterfowl and is effective in the control of mosquitoes.

This project proposes (1) the purchase of one thousand to fifteen hundred acres of drained marshes, that lend themselves to the development of waterfowl areas, at a cost of \$40,000; (2) the building of low but sturdy dikes to restore water levels on marshes now owned by the State and the proposed new acquisitions at a cost of \$75,000; (3) construction of small ponds, tidegates, blinds, rights of way and park-

ing areas at a cost of \$16,000; (4) the necessary supervisory personnel and minor equipment to bring the two-year project to a successful conclusion, \$8900.

### **State Forest Game Improvement, Project III**

During the past ten years, more facts have been added to our knowledge of improving woodlands for forest game species. Since 1940, this Department's Pittman-Robertson Federal Aid Technicians have been testing the values of certain forest operations as a means of improving conditions for grouse. Although this Pittman-Robertson Project is not completed, certain definite procedures have been developed that are known to increase the holding capacity of woodlands for grouse and other forest game species. Although these management procedures will be carried on in conjunction with the State Forestry Department cultural operations in the future, the amount of acreage improved will be limited. Therefore this project which is planned for work on a minimum of twenty-five thousand acres should start now to be of any value to sportsmen during the next ten to fifteen years.

The plan of operation involves the cutting by wood crews in designated areas during the fall and winter months at a unit cost of four dollars per acre. A game technician will be in charge of this project which will expend \$97,275 on the 25,000 acres over a two-year period.

### **Mobile Planting Equipment, Project IV**

Since 1940 the Department has carried on a planting program through the cooperation of the Warden Service and interested landowners and sportsmen. The result of the work has amounted to approximately one hundred acres planted annually at an average cost of between \$35 and \$45 per acre. The State League of Sportsmen's Clubs has urged the Department in recent years to increase this management work materially and to purchase its own equipment to facilitate the program.

New Jersey and Pennsylvania have this program in operation and have quoted a lower figure per acre by using their own planting equipment and personnel from their warden service during the planting season. Due to the limited field force and the multitude of activities of this department, it seems wiser to carry on this project with hired seasonal operators for the two sets of planting equipment contemplated.

The cost of this project including the purchase of planting equipment and payment of operators is estimated to be \$18,600 for the two-year period.

### **Fur Resources Study, Project V**

The fur resources of this state are estimated to be well in excess of \$100,000 each year. Revenue from trappers' licenses amounts to

several thousand dollars annually, yet it is used only for the enforcement of existing laws.

Little factual information is known of our furbearer-game bird relationship. Some species are thought to be over-trapped while others are perhaps too numerous due to restrictive trapping measures.

Connecticut is far behind the leaders in the conservation and management of fur resources.

This project is outlined to conduct a thorough study of fur resources, their relationship with other game species and recommendations for management and legislation. The cost of the project for a two-year period will be \$7,250.

### **Field Trial Grounds, Project VI**

Interest in trials for sporting dogs continues to increase throughout the state; not only with field trial clubs but with the Fish and Game Clubs. Well over a thousand adult pheasants and some quail are liberated by these clubs each year at the running of these trials.

There are several sites in Connecticut which would be suitable for the conduct of bird dog trials. Because of interest in this activity, it seems advisable for the Department to acquire an area which can be developed as an ideal field trial area.

The areas under consideration are all in agricultural sections. Consequently the acquisition cost will be high. It is estimated that the purchase and development of the land will cost approximately \$19,350.

### **Shade Swamp, Project VII**

Since the closing of Shade Swamp Sanctuary in 1938, the Department has received many requests from conservation groups and sportsmen's clubs to reopen the area as a wildlife educational unit.

Shade Swamp, which is State-owned, comprises about 546 acres of land and is located in the town of Farmington. During the depression years, \$11,981 was contributed by Federal Agencies in the building of exhibition pens and other facilities for holding wildlife species natural to Connecticut.

A game warden has been a resident on this area during the period it has been closed, and the pen enclosures and headquarters are in fair repair. It has been estimated that \$9300 will put the area in condition for public use again. The cost of maintaining a caretaker and the necessary stock is placed at \$4270 annually and it has been suggested that some conservation and educational groups will be able to help defray the cost of operation.

## Pittman-Robertson Program

During the biennium two Pittman-Robertson projects have been carried on, the Ruffed Grouse Investigation on State Forests, Project 1-R and the Seed Stock Refuge Investigation in the eastern half of the town of Wallingford, Project 4-R. The latter project was completed in March 1946 and a published report of the work is contemplated.

Work on a third project, "Estimate of Wildlife Populations", Project 5-R was started January 1, 1946. This project is state-wide in scope and will furnish periodic estimates of the population of various species of wildlife in the state. The estimates will be obtained by both office and field methods from such indications of abundance as: the take reported on renewal of licenses, the take reported on permits, actual numbers observed or heard on sample areas, and counts of nests or dens.

Estimates will be made each year for the more important game species, at less frequent intervals for others and for species which prey on, or compete with, game species. It is planned to obtain at least one estimate, during the next ten years, for all, or as many as possible, of the resident animals and birds of the state. In addition, information will be obtained about the range, within the state, of certain species, such as porcupine and opossum, which do not occur state-wide.

Few of the estimates obtained will be actual total populations for the species under consideration but will be an indication of abundance sufficiently accurate so that changes in the population from year to year, or over a period of time, may be measured.

The various phases of an estimate of the wildlife population are often quite unrelated. The information about numbers of a particular species is gathered during a relatively short period, for the rest of the year no more time is spent on that species. Such a project makes it possible to use men for a few months on one phase of the estimates and then lose them without a setback to project activities. We expected and have experienced some such manpower situation. Men were returning from the service that had previously worked for the Department as technicians, most of them temporarily. Few of these men expected to return to the Department permanently but temporary employment on this project offered them an opportunity for contacts and further experience in wildlife work and gave us the services of excellent technicians, as needed. The project was set up with this in mind and has made possible the employment of all ex-service men that had formerly worked for the Department as well as some others.

Federal allocations of funds to carry on these projects have been as follows:—For the fiscal year 1945-1946, \$5,000, 1946-1947, \$6,537.06. In obtaining the allotment of \$5,000 for 1945-1946 the procedure of the Act was modified, under regular allocation procedure we would

have received about \$2,500, and reimbursement to the state was limited to 50% of expenditures.

It has been apparent for some time that the small but heavily populated states were at a disadvantage under the allocation procedure set up by the Act, particularly when the federal appropriations were small. Our efforts and those of other states to correct this situation resulted in an agreement in 1945 that any state could obtain an apportionment of \$5,000 but only on condition that the money would be matched by an equal amount from state funds. In July 1946, the Act was amended to change the method of allocation beginning with the 1947-1948 appropriation and a minimum that the small states shall receive as well as a maximum to the large states is now provided, on a percentage basis. Federal participation remains at 75% of the cost of the projects.

Under this amended allocation procedure it is expected that there will be less fluctuation than has occurred in the past, in the amount of money available to us, and that the amounts will average considerably larger. We can now expect about \$4,500 from each \$1,000,000 that Congress appropriates for the Act. Had the amendment been in effect we would have received about \$11,250, as the 1946-1947 allocation.

Assurance of more funds and the establishment of a minimum below which the annual allotment will not go have already strengthened the Pittman-Robertson program. The population estimates could not have been attempted without such assurance. These estimates, that will from time to time clearly indicate the relative numbers of each species of wildlife, are basic information in approaching any problem concerning game. The nation-wide estimates of the waterfowl population have been of value in planning the amount and character of breeding, feeding and refuge areas as well as in indicating the numbers that might be safely taken by hunters. Had they been available so that measures to halt the decrease could have been taken sooner the lean years might have been avoided.

There is need of much other factual information, some as basic as the inventory of our wildlife, in planning the work of the Department. The management of our wildlife resources, by such methods as regulations, sanctuaries, food plantings, stocking and other methods yet to be developed, needs all the information that this program can obtain. Some of the findings of some projects may be of little interest to sportsmen but the result, in increased game, is the desire of the Department and sportsmen alike.

Responsibility for furnishing data as a basis for management and the testing of management methods under Connecticut conditions will be the primary aim of the Pittman-Robertson program in the future as it has been in the past. It is contemplated, however, that some of the future projects may be undertaken for somewhat different reasons than those already given. To date we have set up projects to

answer questions that arose within the Department and project findings were most useful in planning Department programs. In the future it is hoped that some projects can be set up to answer questions that are particularly troubling to sportsmen or legislators and that the findings may aid them, in our joint efforts for an ample supply of game afield that may be shot without endangering the species.

PHEASANTS PURCHASED AND LIBERATED — 1944

	Cocks	Hens	Total	Cost
Spring .....	404	1,858	2,262	\$ 7,175.75
During Season .....	9,670	....	9,670	33,646.01
Post Season .....	....	3,780	3,780	12,633.20
	<hr/>	<hr/>	<hr/>	<hr/>
	10,074	5,638	15,712	\$53,454.96
Total Purchased .....	15,712	*		
Died or Escaped* .....	46			
	<hr/>			
Total Liberated .....	15,666			
				Hens Cocks
				1 1
				.. 45
				— —
				1 46
				Post Season (by gift) ... 1 ..
				— —
				0 46

PHEASANTS PURCHASED AND LIBERATED — 1945

	Cocks	Hens	Total	Cost
Spring .....	300	1,056	1,356	\$ 5,059.25
During Season .....	12,013	....	12,013	44,751.90
Post Season .....	206	3,989	4,195	14,350.60
	<hr/>	<hr/>	<hr/>	<hr/>
	12,519	5,045	17,564	\$64,161.75
				Total Purchased .....
				17,564
				Died or Escaped* .....
				23
				<hr/>
				Total Liberated .....
				17,541

\* During Season—23 Cocks.

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PHEASANT LIBERATION BY WARDEN DISTRICTS — 1944

DISTRICTS	SPRING			DURING SEASON	POST SEASON			TOTAL		
	Cocks	Hens	Total	Cocks	Hens	Cocks	Hens	Total		
I—Litchfield .....	28	141	169	1,205	301	1,233	442	1,675		
II—Hartford .....	48	233	281	1,069	512	1,117	745	1,862		
III—New Haven .....	74	281	355	1,481	750	1,555	1,031	2,586		
IV—Fairfield .....	72	300	372	1,623	520	1,695	820	2,515		
V—Tolland .....	88	436	524	1,718	1,123	1,806	1,559	3,365		
VI—Windham .....	39	221	260	887	160	926	381	1,307		
VII—New London .....	28	107	135	875	244	903	351	1,254		
VIII—Middlesex .....	26	138	164	767	171	793	309	1,102		
TOTAL .....	403	1,857	2,260	9,625	3,781	10,028	5,638	15,666		

PHEASANT LIBERATION BY WARDEN DISTRICTS

1945 SEASON

DISTRICTS	SPRING			DURING SEASON	POST SEASON			TOTAL		
	Cocks	Hens	Total	Cocks	Cocks	Hens	Total	Cocks	Hens	Total
I—Litchfield .....	25	100	125	1,324	..	350	350	1,349	450	1,799
II—Hartford .....	30	116	146	1,480	..	480	480	1,510	596	2,106
III—New Haven .....	38	148	186	1,760	..	550	550	1,798	698	2,496
IV—Fairfield .....	40	160	200	1,907	..	354	354	1,947	514	2,461
V—Tolland .....	106	280	386	2,016	206	1,580	1,786	2,328	1,860	4,188
VI—Windham .....	29	120	149	1,200	..	400	400	1,229	520	1,749
VII—New London .....	15	60	75	1,127	..	175	175	1,142	235	1,377
VIII—Middlesex .....	17	72	89	1,176	..	100	100	1,193	172	1,365
TOTAL .....	300	1,056	1,356	11,990	206	3,989	4,195	12,496	5,045	17,541

## COOPERATIVE PHEASANT REARING PROGRAM — 1944

DISTRICTS	Number Chicks		Number Birds Liberated			%
	Furnished By	Department	Cocks	Hens	Total	
<b>District I</b>						
Gianpaolo, A. ....	30		4	7	11	37
Seymour Fish & Game Club .....	400		62	56	118	30
Watertown Fish & Game .....	50		..	10	10	20
Total .....	480		66	73	139	29
<b>District II</b>						
Carroll, J. P. ....	100		..	..	..	..
Ginocchio, J. ....	50		20	20	40	80
Larson, D. ....	15		..	..	..	..
Simsbury Fish & Game Club .....	395		122	132	254	64
Total .....	560		142	152	294	52
<b>District III</b>						
Brown, F. ....	25		..	..	..	..
Cromwell Rod & Gun Club .....	200		35	31	66	33
Heser, L. ....	25		..	..	..	..
Hamden Fish & Game Club .....	280		114	89	203	73
Meriden Rod & Gun Club .....	150		40	22	62	41
Middletown Sportsmen .....	50		13	11	24	48
Mursky, D. ....	25		3	2	5	20
Mursky, G. ....	25		8	9	17	68
Weiss, G. ....	25		8	0	8	32
Total .....	805		221	164	385	48
<b>District IV</b>						
Norwalk Rod & Gun Club .....	100		42	42	84	84
New Canaan Fish & Game .....	200		56	56	112	56
Total .....	300		98	98	196	65
<b>District V</b>						
East Hartford Ct. Sportsmen Assoc. ...	250		44	48	92	36
Glastonbury Fish & Game .....	400		131	113	244	61
Manchester Dv. Ct. Sportsmen .....	400		64	85	149	37
Meyer, Carl .....	100		42	44	86	86
Total .....	1,150		281	290	571	50
<b>District VI</b>						
Windham County Wildlife Conservation 4H Club .....						
Andersen, M. ....	100		31	49	80	80
Danielson, J. ....	50		0	..	..	..
McKinstry & Willis, R. ....	600		233	283	516	86
Hibbard, Carlton .....	50		15	18	33	66
Peckham, Howard .....	150		20	21	41	27
Richmond, Russell .....	250		88	67	155	62
Total .....	1,200		387	438	825	69



COOPERATIVE PHEASANT REARING PROGRAM — 1945

DISTRICTS	Number Chicks Furnished By Department	Number Birds Liberated in Fall of 1945			Number Birds Liberated in Spring 1946			Total Birds Liberated			%
		Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total	
<b>District I</b>											
Canaan Rod & Gun Club .....	36	100	15	115	..	..	..	100	15	115	..
Middlebury Rod & Gun Club ....	125	..	..	..	..	..	..	..	..	..	..
Naugatuck Fish & Game Club ...	400	25	27	52	3	5	8	28	32	60	15
New Milford Sportsmen's Assoc.	400	142	124	266	..	..	..	142	124	266	66
Housatonic Club .....	150	..	..	..	..	..	..	..	..	..	..
Torrington Fish & Game Assoc.	100	40	13	53	3	10	13	43	23	66	66
Waterbury Fish & Game Club ...	350	57	57	114	..	..	..	57	57	114	32
Watertown Fish & Game Club ..	50	12	..	12	..	..	..	12	..	12	24
Woodbury Rod & Gun Club ....	308	48	42	90	..	..	..	48	42	90	29
<b>TOTAL</b> .....	<b>1,919</b>	<b>324</b>	<b>263</b>	<b>587</b>	<b>6</b>	<b>15</b>	<b>21</b>	<b>330</b>	<b>278</b>	<b>608</b>	<b>32</b>
<b>District II</b>											
Berlin Game Club .....	200	71	22	93	..	30	30	71	52	123	61
Bloomfield Game Club .....	402	115	191	306	..	..	..	115	191	306	76
Ratlin Mt. Game Club .....	200	12	14	26	..	..	..	12	14	26	13
Simsbury Game Club .....	399	160	166	326	..	..	..	160	166	326	82
<b>TOTAL</b> .....	<b>1,201</b>	<b>358</b>	<b>393</b>	<b>751</b>	<b>..</b>	<b>30</b>	<b>30</b>	<b>358</b>	<b>423</b>	<b>781</b>	<b>65</b>
<b>District III</b>											
Ansonia Rod & Gun Club .....	425	179	149	328	..	..	..	179	149	328	77
Bethany Landowners .....	200	55	51	106	..	..	..	55	51	106	53
Durham Rod & Gun Club .....	250	70	..	70	5	128	133	75	128	203	81
Hamden Fish & Game Club .....	500	92	301	393	..	10	10	92	311	403	81
Meriden Rod & Gun Club .....	225	14	11	25	..	..	..	14	11	25	11
Seymour Fish & Game Club .....	325	40	47	87	..	..	..	40	47	87	27
Cunningham & Rettich .....	50	..	..	..	..	..	..	..	..	..	..
John S. Pacht .....	12	4	4	8	..	..	..	4	4	8	67
<b>TOTAL</b> .....	<b>1,987</b>	<b>454</b>	<b>563</b>	<b>1,017</b>	<b>5</b>	<b>138</b>	<b>143</b>	<b>459</b>	<b>701</b>	<b>1,160</b>	<b>58</b>

COOPERATIVE PHEASANT REARING PROGRAM — 1945—(Continued)

DISTRICTS	Number Chicks Furnished By Department	Number Birds Liberated in Fall of 1945			Number Birds Liberated in Spring 1946			Total Birds Liberated			%
		Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total	
<b>District IV</b>											
New Canaan Fish & Game League	200	9	4	13	..	..	..	9	4	13	6
Norwalk Rod & Gun Club	100	28	29	57	..	..	..	28	29	57	57
TOTAL	300	37	33	70	..	..	..	37	33	70	23
<b>District V</b>											
East Hartford Conn. Sportsmen ..	350	135	118	253	..	..	..	135	118	253	72
Enfield Hunters Club	300	102	92	194	..	..	..	102	92	194	65
Manchester Ct. Sportsmen's Assoc	250	85	69	154	..	..	..	85	69	154	62
Carl Meyer	100	32	21	53	..	..	..	32	21	53	53
TOTAL	1,000	354	300	654	..	..	..	354	300	654	65
<b>District VI</b>											
Windham County Wildlife 4H Club											
Anderson, Mary	100	32	38	70	..	..	..	32	38	70	70
Gardner, Merritt	50	12	22	34	..	..	..	12	22	34	68
Peckham, Howard	100	24	23	47	..	..	..	24	23	47	47
Richmond, J. & B.	250	56	68	124	..	..	..	56	68	124	50
Willis & McKinstry	738	288	327	615	..	..	..	288	327	615	83
TOTAL	1,238	412	478	890	..	..	..	412	478	890	72
<b>District VII</b>											
Norwich Fish & Game Club	400	60	83	143	..	..	..	60	83	143	36
Patchaug Outdoor Club	150	40	46	86	..	..	..	40	46	86	57
TOTAL	550	100	129	229	..	..	..	100	129	229	42
<b>District VIII</b>											
Ashcroft, M.	50	..	..	..	..	..	..	..	..	..	..
Champlin, C.	125	35	30	65	..	..	..	35	30	65	52
Hester, E.	25	7	7	14	..	..	..	7	7	14	56
Kent, W.	25	5	5	10	..	..	..	5	5	10	40
Markoff, T.	25	..	..	..	..	..	..	..	..	..	..
Scarpa, F.	100	6	6	12	..	..	..	6	6	12	12
TOTAL	350	53	48	101	..	..	..	53	48	101	29
STATE TOTAL	8,545	2,092	2,207	4,299	11	183	194	2,103	2,390	4,493	52.5

**FOUR YEAR AVERAGE OF PHEASANT BAND RETURNS**  
1941-1944

	SPRING			AUG. & SEPT.			DURING SEASON			TOTAL		
	Banded	Returns	%	Banded	Returns	%	Banded	Returns	%	Banded	Returns	%
District I .....	321	5	1.5	979	157	16.0	5,842	1,532	26.2	7,142	1,694	23.7
District II .....	314	6	1.9	1,227	120	9.7	4,738	693	14.6	6,279	819	13.0
District III .....	338	8	2.3	1,192	107	9.0	5,793	749	12.9	7,323	864	11.8
District IV .....	351	4	1.1	1,427	197	13.8	6,126	1,133	18.4	7,904	1,334	16.8
District V .....	688	16	2.3	2,643	392	14.8	7,083	1,676	23.6	10,414	2,084	20.2
District VI .....	253	10	3.9	1,606	121	7.5	3,357	463	13.7	5,216	594	11.3
District VII .....	250	6	2.4	1,049	154	14.6	3,674	962	26.2	4,973	1,122	22.5
District VIII .....	139	4	2.8	599	50	8.3	2,582	348	13.4	3,320	402	12.1
<b>TOTAL .....</b>	<b>2,654</b>	<b>59</b>	<b>2.2</b>	<b>10,722</b>	<b>1,298</b>	<b>12.1</b>	<b>39,195</b>	<b>7,556</b>	<b>19.2</b>	<b>52,571</b>	<b>8,913</b>	<b>16.9</b>

### REPORT OF QUAIL PURCHASE AND DISTRIBUTION — 1944

#### PURCHASE

	Cocks	Hens	Total	Total Cost
Spring (By Gift) .....	9	20	29	\$.....
Fall .....	454	454	908	1,755.00
<b>TOTAL .....</b>	<b>463</b>	<b>474</b>	<b>937</b>	<b>\$1,755.00</b>

#### DISTRIBUTION

	SPRING			FALL			TOTAL		
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total
Dist. 3 .....	9	20	29	219	219	438	228	239	467
Dist. 7 .....	..	..	..	135	135	270	135	135	270
Dist. 8 .....	..	..	..	100	100	200	100	100	200
<b>TOTAL .....</b>	<b>9</b>	<b>20</b>	<b>29</b>	<b>454</b>	<b>454</b>	<b>908</b>	<b>463</b>	<b>474</b>	<b>937</b>

### REPORT OF QUAIL PURCHASE & DISTRIBUTION — 1945

#### PURCHASE

	Cocks	Hens	Total	Total Cost
Spring* .....	252	251	503	\$1,345.00
Fall .....	300	300	600	1,220.00
<b>TOTAL .....</b>	<b>552</b>	<b>551</b>	<b>1,103</b>	<b>\$2,565.00</b>

#### DISTRIBUTION

	SPRING			FALL			TOTAL		
	Cocks	Hens	Total	Cocks	Hens	Total	Cocks	Hens	Total
Dist. 3 .....	85	95	180	150	150	300	235	245	480
Dist. 5** .....	37	33	70	..	..	..	37	33	70
Dist. 7 .....	65	65	130	50	50	100	115	115	230
Dist. 8 .....	65	58	123	100	100	200	165	158	323
<b>TOTAL .....</b>	<b>252</b>	<b>251</b>	<b>503</b>	<b>300</b>	<b>300</b>	<b>600</b>	<b>552</b>	<b>551</b>	<b>1,103</b>

\* Twenty-three (23) of these birds given to Department by a game breeder.

\*\* Used for field trial.

**RACCOON LIBERATIONS — 1944**

Cooperators	Number	Cost
Candlewood Coon Club .....	5	\$ 18.75
Meriden Rod & Gun Club .....	15	56.25
No. E. Fish & Game Association .....	11	41.25
Simsbury Coon Club Inc. ....	6	22.50
Torrington Fish & Game Club .....	5	18.75
Watertown Fish & Game Club .....	10	37.50
<b>TOTAL</b> .....	<b>52</b>	<b>\$195.00</b>

**RACCOON LIBERATION — 1944**

DISTRICT	NUMBER LIBERATED
I .....	20
II .....	6
III .....	15
VI .....	2
VII .....	9
	<u>52</u>

**RACCOONS LIBERATED BY TOWNS BY DISTRICTS**

DISTRICT I	NUMBER LIBERATED
Bridgewater .....	2
Kent .....	1
New Milford .....	2
Torrington .....	5
Watertown .....	8
Woodbury .....	2
	<u>20</u>
<b>DISTRICT II</b>	
Simsbury .....	6
<b>DISTRICT III</b>	
Meriden .....	15
<b>DISTRICT VI</b>	
Thompson .....	2
<b>DISTRICT VII</b>	
Franklin .....	2
North Stonington .....	1
Norwich .....	2
Voluntown .....	4
	<u>9</u>

**RACCOON DISTRIBUTION — FALL 1945**

Cooperating Clubs	Number Liberated			Cost to Department
	Male	Female	Total	
Candlewood Coon Club .....	4	7	11	\$ 55.00
Eastern Conn. Field Trial Association ...	8	7	15	112.50
Meriden Rod & Gun Club .....	5	7	12	60.00

Middletown Sportsmen's Club .....	4	7	11	67.50
Simsbury Coon Club .....	3	2	5	16.00
Watertown Fish & Game Club .....	5	2	7	28.00
White Hills Coon Dog Club .....	6	3	9	46.00
	35	35	70	\$385.00
Department Purchase .....	3	3	6	54.00
<b>TOTAL</b> .....	<b>38</b>	<b>38</b>	<b>76</b>	<b>\$439.00</b>

Cooperative Distribution 70 @ \$385.00=\$5.50 average cost per raccoon liberated.  
 Total Distribution 76 @ \$439.00=\$5.77+ average cost per raccoon liberated.

### RACCOON DISTRIBUTION — FALL 1945

#### DISTRIBUTION BY WARDEN DISTRICTS

DISTRICT	NUMBER		
	Male	Female	Total
I .....	9	9	18
II .....	6	5	11
III .....	9	14	23
IV .....	6	3	9
VI .....	1	1	2
VII .....	7	6	13
	38	38	76

#### DISTRIBUTION BY TOWNS BY WARDEN DISTRICTS

DISTRICT	TOWN	NUMBER					
		Male	Female	Total	Male	Female	Total
DISTRICT I	Kent .....	1	1	2	..	..	..
	New Milford ..	3	6	9	..	..	..
	Watertown .....	5	2	7	..	..	..
		—	—	—	9	9	18
DISTRICT II	Avon .....	2	1	3	..	..	..
	Simsbury .....	3	2	5	..	..	..
	Suffield .....	1	2	3	..	..	..
		—	—	—	6	5	11
DISTRICT III	Meriden .....	5	7	12	..	..	..
	Middletown ...	4	7	11	..	..	..
		—	—	—	9	14	23
DISTRICT IV	Monroe .....	4	2	6	..	..	..
	Shelton .....	2	1	3	..	..	..
		—	—	—	6	3	9
DISTRICT VI	Thompson .....	1	1	2	1	1	2
DISTRICT VII	Griswold .....	1	1	2	..	..	..
	Groton .....	1	0	1	..	..	..
	Norwich .....	1	1	2	..	..	..
	Sprague .....	1	3	4	..	..	..
	Stonington .....	1	1	2	..	..	..
Voluntown ....	2	0	2	..	..	..	
		—	—	—	7	6	13
					38	38	76

REPORT ON REGULATED SHOOTING  
SEASON 1944

Pheasants Liberated	Cocks	Hens	Total
Spring	169	756	925
During Season	3,525	.....	3,525
Post Season	.....	1,855	1,855
Birds raised from day-old chicks	585	353	938
<b>TOTAL</b>	<b>4,279</b>	<b>2,964</b>	<b>7,243</b>

	Season Permits	Oct.	Daily Permits Nov.	Dec.	Total	Total Season and Daily Permits
Permits issued	3,070	1,447	1,446	273	3,166	6,236
Permits returned	2,551	1,145	1,170	241	2,556	4,807
% Returned	73.3	79.1	80.9	88.2	80.7	77.1

GAME KILLED

Pheasants	3,464	282	200	8	490	3,954
Grouse	663	31	50	0	81	744
Quail	74	2	9	0	11	85
Woodcock	663	20	13	0	33	696
Ducks	1,191	52	18	9	79	1,270
Squirrels	4,650	532	539	51	1,122	5,772
Rabbits	5,711	60	458	161	679	6,390

REPORT ON REGULATED SHOOTING  
SEASON OF 1945

Pheasants Liberated	Cocks	Hens	Total
Spring	180	586	766
During Season	6,852	.....	6,852
Post Season	187	2,899	3,086
Day-old Chicks	1,253	1,253	2,506
<b>TOTAL</b>	<b>8,472</b>	<b>4,738</b>	<b>13,210</b>

	Season Permits	Oct.	Daily Permits Nov.	Dec.	Jan.	Total	Total Season and Daily Permits
Permits issued	3,567	2,058	1,891	168	10	4,127	7,694
Permits returned	1,398	1,406	1,375	120	0	2,901	4,299
% Returned	39.2	68.3	72.7	71.4	..	70.3	55.9

GAME KILLED

Pheasants	2,533	307	260	0	0	567	3,100
Grouse	438	46	50	0	0	96	534
Woodcock	642	57	19	3	0	79	721
Ducks	986	38	23	11	0	72	1,058
Squirrels	3,400	523	309	9	0	841	4,241
Rabbits	4,068	132	427	88	0	647	4,715

TABULATION OF GAME BREEDER'S REPORTS

1944

Number of game breeder's licenses issued .....	366
Number of breeders that reported raising game .....	182
Birds reported raised:	
Game pheasants .....	30,891
Fancy pheasants .....	50
Quail .....	4,267
Ducks and geese .....	699
Miscellaneous species, swan, doves and partridge .....	23
Animals reported raised:	
Mink .....	4,796
Fox .....	495
Raccoon .....	89
Muskrat .....	60
Miscellaneous species, deer, skunk .....	27
Game pheasants sold to Department .....	14,165
Game pheasants reported sold outside of State .....	13,547

TABULATION OF GAME BREEDER'S REPORTS — 1945

Number of game breeder's licenses issued .....	385
Number of breeders that reported raising game .....	207
Birds reported raised:	
Game pheasants .....	41,407
Fancy pheasants .....	13
Quail .....	4,670
Ducks and Geese .....	982
Animals reported raised:	
Mink .....	7,473
Fox .....	554
Raccoon .....	69
Muskrat .....	19
Miscellaneous species: Deer .....	33
Game Pheasants sold to Department .....	19,023
Game Pheasants reported as sold outside of State .....	15,145

REPORT OF DEER KILLED SHOWING CAUSE OF DEATH

1944

District	Permittee	Accident	Trains	Dogs	Autos	Found Injured	Unknown	Illegal	Total	Buck	Doe	Unknown
Litchfield .....	169	1		3	11		1	7	192	128	62	2
Hartford .....	12	3			2			2	19	10	3	6
New Haven .....	61	1	1	1	6	2	3	6	81	44	33	4
Fairfield .....	42							2	44	30	14	
Tolland .....	26				6	1		3	36	20	15	1
Windham .....	76			2	10		2	9	99	51	41	7
New London .....	16			2	2	1			21	13	7	1
Middlesex .....	38				7	1		3	49	24	24	1
TOTALS .....	440	5	1	8	44	5	6	32	541	320	199	22

REPORT OF DEER KILLED SHOWING CAUSE OF DEATH

1945

District	Permittee	Accident	Trains	Dogs	Autos	Found Injured	Unknown	Illegal	Total	Buck	Doe	Unknown
Litchfield .....	87	3		16	8	1	1	3	119	67	47	5
Hartford .....	6	1		1	4			1	13	8	4	1
New Haven .....	25		1	1	9		4	1	41	19	17	5
Fairfield .....	41			1	14	2		11	69	44	24	1
Tolland .....	47	1		5	10		3	1	67	39	27	1
Windham .....	91		1	3	7		1	30	133	60	67	6
New London .....	55				1				56	33	19	4
Middlesex .....	34	2		3	4	1		5	49	32	12	5
TOTAL .....	386	7	2	30	57	4	9	52	547	302	217	28

## BOUNTIES PAID THROUGHOUT THE STATE — 1944 and 1945

## HARTFORD COUNTY

1944		1945	
27 Towns reported no bounties paid.		26 Towns reported no bounties paid.	
2 Towns reported bounties paid as follows:		3 Towns reported bounties paid as follows:	
Wildcats .....	\$5.00	Foxes .....	\$ 5.00
Woodchucks ..	7.70	Wildcats .....	10.00
	<hr/>	Woodchuck ...	3.50
	\$12.70		<hr/>
			\$18.50

## NEW HAVEN COUNTY

1944		1945	
27 Towns reported no bounties paid.		25 Towns reported no bounties paid.	
		2 Towns reported bounties paid as follows:	
		Foxes .....	\$10.00

## NEW LONDON COUNTY

1944		1945	
9 Towns reported no bounties paid.		9 Towns reported no bounties paid.	
12 Towns reported bounties paid as follows:		12 Towns reported bounties paid as follows:	
Wildcats .....	\$ 15.00	Wildcats .....	\$ 5.00
Foxes .....	2,085.00	Foxes .....	1,678.00
	<hr/>		<hr/>
	\$2,100.00		\$1,683.00

## FAIRFIELD COUNTY

1944		1945	
21 Towns reported no bounties paid.		21 Towns reported no bounties paid.	
2 Towns reported bounties paid as follows:		2 Towns reported bounties paid as follows:	
Foxes .....	\$44.00	Foxes .....	\$26.00

## WINDHAM COUNTY

1944		1945	
13 Towns reported no bounties paid.		12 Towns reported no bounties paid.	
2 Towns reported bounties paid as follows:		3 Towns reported bounties paid as follows:	
Wildcats .....	\$ 5.00	Wildcats .....	\$15.00
Foxes .....	214.00		
	<hr/>		
	\$219.00		

## LITCHFIELD COUNTY

1944		1945	
18 Towns reported no bounties paid.		18 Towns reported no bounties paid.	
8 Towns reported bounties paid as follows:		8 Towns reported bounties paid as follows:	
Wildcats .....	\$35.00	Wildcats .....	\$ 30.00
Rattlesnake ...	1.00	Jack Rabbits ..	30.00
Jack Rabbit ..	22.00	Rattlesnakes ..	3.00
Foxes .....	12.00	Foxes .....	291.00
	<hr/>		<hr/>
	\$70.00		\$354.00

MIDDLESEX COUNTY

1944	1945
11 Towns reported no bounties paid.	11 Towns reported no bounties paid.
4 Towns reported bounties paid as follows:	4 Towns reported bounties paid as follows:
Weasels ..... \$ 1.50	Foxes ..... \$148.50
Foxes ..... 123.50	
<u>\$125.00</u>	

TOLLAND COUNTY

1944	1945
13 Towns reported no bounties paid.	13 Towns reported no bounties paid.

STATE TOTAL

1944	1945
Wildcats ..... \$ 60.00	Wildcats ..... \$ 60.00
Woodchucks ..... 7.70	Woodchucks ..... 3.50
Foxes ..... 2,478.50	Foxes ..... 2,158.50
Rattlesnakes ..... 1.00	Rattlesnakes ..... 3.00
Jack Rabbits ..... 22.00	Jack Rabbits ..... 30.00
Weasels ..... 1.50	
<u>\$2,570.70</u>	<u>\$2,255.00</u>

PRIVATE SHOOTING PRESERVES UNDER STATE REGULATION

	1944-45 Season	1945-46 Season
Number of Preserves in Operation .....	12	14
Number Operating During Regular Season .....	1	1
Number Operating During Extended Season .....	11	13
Total Acreage .....	7,201	8,341
Total Reported Pheasant Liberation .....	4,749	6,036
Total Reported Pheasant Kill .....	2,499	2,966
Percentage of Kill on Number Liberated .....	52.6%	49.1%

## Division of Fish Restoration

### Trout Restoration

The introduction of legal size trout in all of our streams during the past biennium features the trout restoration program. Tables will be found in another section giving the total trout planted.

Food for trout rearing has not been plentiful, although we have been very fortunate in securing enough to carry on.

### Plant Improvements and New Equipment.

Plant improvements and new equipment consist of one new pool 40 feet by 100 feet and installation of asbestos siding at the Burlington Hatchery. Two new pools 40 feet by 100 feet are in the course of construction and should be completed and stocked with trout in the near future.

Plans have been completed to rebuild six pools at the Kensington Hatchery early in 1947.

A walk-in freezer of approximately three tons capacity has been installed at Kensington.

New sills, a new dam and improved water system have been installed at the Windsor Locks Hatchery.

### Lobsters

The 1946 lobster rearing season at the Noank Station was very satisfactory. Although only 1,084 egg-bearing lobsters were received, 223,814 fourth-stage lobsters were released along the Connecticut shore.

### Pond Fish

Commercial fishermen continue to supply the larger portion of pond fish stocked by the Department. In addition, smallmouth black bass fry are obtained under a cooperative program with the United States Fish and Wildlife Service.

## SHAD

Angling for shad on the Connecticut River has justly attained considerable popularity during the past few years. This sport has been highly publicized because large numbers of individuals participate; but regardless of its popularity, it is second in importance to the commercial fishing catch.

The necessity of maintaining patrolmen for protection of property of the Windsor Locks Canal Company and to insure orderliness dur-

ing angling at the west end of Enfield Dam offered a fine opportunity to collect statistics of catch from anglers at this location. Permits issued to fishermen were returned with information on number of shad taken and hours fished for each angler. The table on the following page is derived from these data.

**SUMMARY OF RECORDS OF ANGLERS CHECKED BY PATROLMEN  
AT ENFIELD DAM ON CONNECTICUT RIVER  
FOR THE YEARS 1941-1946**

Year	Total Number Anglers	Total Hours Fished	Average Hours per Angler	Total Shad Caught	Average Hours Fished per Shad Taken
1941 .....	3,449	10,190	2.95	6,859	1.49 (1 hr. 29 min.)
1942 .....	5,172	15,472	2.99	5,395	2.87 (2 hr. 52 min.)
1943 .....	2,340	8,033	3.43	6,519	1.23 (1 hr. 14 min.)
1944 .....	5,110	18,913	3.70	9,370	2.01 (2 hr. 1 min.)
1945 .....	5,512	19,103½	3.47	6,752	2.83 (2 hr. 49 min.)
1946 .....	5,280	16,150	3.06	4,385	3.68 (3 hr. 40 min.)

Information from commercial shad fishermen's reports appears in tabular form below.

Year	Type	No. Nets Registered	No. Nets Used	Total Catch	Total Catch Pounds	Valuation
1944	Commercial .....	61	56	214,086	709,986	\$37,866.77
	Semi-Commercial ...	38	33			
	Total .....	99	89			
1945	Commercial .....	91	84	222,337	767,414	\$115,406.42
	Semi-Commercial ...	47	35			
	Total .....	138	119			

Commercial nets include drift, gill nets, seines, and pound nets. Semi-commercial nets include set gill nets and scoop nets.

From similar compilation of records kept since 1890, it is known that shad abundance shows extreme fluctuation. Of all the possible causes of this cyclic behavior, only those stemming from the efforts of man on the shad population can be controlled by man. The removal by fishing of a large percentage of the fish from the spawning run before the shad have deposited eggs must have a very adverse effect on future generations. It is too late to regulate the fishery when it becomes apparent from the catch that the shad population is dangerously low in numbers. It is necessary to know what the population will be at least a year in advance.

During the years of 1944 and 1945, a detailed study has been conducted of both the commercial and the angler's fishery. This study included an analysis of commercial catch and possible reasons for its fluctuations, investigation of the yearly mortality rate and escapement of the Connecticut River shad population, and physical or chemical

phenomena which might influence either the size of the run or the total catch. The investigation was designed to furnish information necessary for management of the fishery.

### Commercial Fisheries

The commercial fisheries of Connecticut during the war years has shown an increase in the value of the catch. The lobster catch remains about the same. There is a greater number of men engaged in lobstering. They set from three to fifteen traps and work at lobstering during the summer months only.

During 1944 this Department issued to marine fishermen 443 registered boat licenses and 339 additional operator's licenses, making a total of 782 marine operators licensed in the State. Added to this are fifty vessels which, while fishing out of Connecticut, do not need a Connecticut license and carry a crew of from three to five men, making a total of over one thousand men directly engaged in the catching of fish in our marine commercial fisheries. During 1945 the call for licenses increased to 620 registered boats and 454 other operators, making a total of one thousand seventy-four operators licensed by Connecticut, an increase of 292 licenses for the year. The trend today is still toward an increase and marine fishing is becoming a larger business in the State of Connecticut.

The fleet of off shore vessels of 45 to 65 feet in length is still increasing. During the past two years there were 10 new ones added to the fleet. These vessels represent an investment of from \$25,000 to \$35,000, complete with fishing gear. All the larger vessels and many of the smaller ones are doing away with gas engines and installing Diesels. During the past two years two of our large otter trawlers were lost. One of them, the Alice and Jenny, was wrecked on Block Island and was a total loss. The other, the Captain Nathaniel B. Palmer, was blown up by a bomb or mine that she dragged up in her fishing operations. Several mines have been brought in by other boats during this period.

Stonington is the leading port for landings and has the largest fleet of off shore boats. There are at Stonington now, two large docks for fishermen, one new one having been added during the past two years. The new dock as well as the old one has all modern facilities for the packing and icing of the fishermen's catches and trucks run from both docks directly to Fulton Market in New York City. Landings at Stonington average 1,000,000 pounds of fish a month throughout the year. During the year 1945 the months of January, February, and March were very poor, owing to severe weather. Fishing was so good during the other months that the average was maintained at 1,000,000 pounds. Landings received at Fulton Market in February totaled only 296,325 pounds of fish. June landings totaled 1,989,253 pounds of fish received from Connecticut.

The yellowtail, which in the past yielded the largest poundage, has been declining because of a scarcity of the fish in inshore areas.

Daylights or sand flounders have been used to the greatest extent during the past two years. While none were reported in 1942, the reported catch in 1943 was over 36,600 pounds. In 1944 there were 160,183 pounds reported.

Lemon sole showed a marked increase in the past two years, jumping from 2,895 pounds in 1943 to 42,905 pounds in 1944. This was due in part to O.P.A. rulings. Extra large flounders, which before were just flounders, were called lemon sole on account of price ceilings.

Flounders or blackbacks, due to a very intensive fishing and better prices, jumped in 1945 over 1,000,000 pounds above 1944.

#### CATCH RECORDS ON COMMERCIAL SPECIES

	1943	1944
Alewives .....	74,195	9,500
Anglerfish .....	30,750	20,449
Blackfish (tautog) .....	29,917	46,536
Bluefish .....	9,383	15,803
Bonito .....	600	3,400
Blowfish .....	.....	850
Butterfish .....	314,824	247,278
Codfish .....	205,223	404,432
Cunners .....	4,627	6,026
Daylights .....	36,600	160,183
Dogfish .....	6,075	5,375
Eels (common) .....	29,446	33,162
Eels (congo) .....	.....	482
Eels (lamprey) .....	75	6
Eels (ocean pout) .....	187,490	710,599
Flounders .....	4,585,923	5,180,853
Fluke .....	239,932	527,415
Gray sole .....	6,690	3,808
Haddock .....	6,020	39,678
Hake .....	195,502	70,345
Herring (sea) .....	6,729	2,022
Kingfish .....	6,483	4,870
Lemon sole .....	2,895	42,905
Ling .....	56,738	132,475
Lobsters .....	314,293	395,295
Mullet .....	.....	55
Mackerel .....	60,054	135,283
Pollock .....	12,117	25,158
Scup (porgy) .....	1,655,355	1,492,311
Sea bass .....	8,462	11,542
Sea robin .....	20,830	31,815
Shad .....	604,882	723,934
Skates .....	46,429	20,725
Shark .....	7,259	12,538
Squid .....	40,017	57,496
Striped bass .....	25,968	46,193
Sturgeon .....	1,392	2,096

Swordfish .....	3,229	1,990
Tuna .....	400	106
Tilefish .....	10,000	.....
Weakfish .....	57,858	58,601
Whiting .....	1,429,619	1,626,782
Yellowtail .....	3,580,018	5,579,075
Unclassified .....	1,668,169	1,046,679
<b>TOTALS.....</b>	<b>15,582,468 lbs.</b>	<b>18,936,126 lbs.</b>

**Post War Program**

The Division has proposed the following projects for inclusion in the Department's post war program.

- (1) Development of two trout rearing sites including construction and equipment costs ..... \$210,000.00
- (2) Additions and repairs to existing hatcheries.
  - Cold storage plant—(Burlington Hatchery) ..... 40,000.00
  - Garage—(Burlington Hatchery) ..... 30,000.00
  - Repairs to existing ponds—(Kensington Hatchery) ..... 15,000.00
  - Relocation of pipe lines—(Kensington Hatchery) ..... 6,000.00
  - Roadways—(Kensington & Windsor Locks) .. 4,000.00
  - Toilet—(Windsor Locks Hatchery) ..... 350.00
  - Addition of pipe lines—(Voluntown station) ..... 2,000.00
- (3) Pond Fish Program.
  - Acquisition and development of twelve rearing ponds ... \$ 50,000.00
  - Headquarters house and storeroom ..... 25,000.00
  - Equipment (nets—\$10,000.00) ..... 15,000.00
- (4) Stream Improvement.
  - Personnel—Supervisory—(4-year period) ..... \$ 36,720.00
  - Travel and expense for supervisors ..... 10,800.00
  - Labor and materials ..... 200,000.00
- (5) Improvement of State-owned rights-of-way ..... \$ 50,000.00
- (6) Construction of dam at Barber's Pond—Windsor ..... 10,000.00
- (7) Leasing of additional trout streams ..... 50,000.00
- (8) Equipment—Four 18' speed boats ..... 12,000.00
  - One patrol boat ..... 10,000.00

**GRAND TOTAL ..... \$776,870.00**

## DISTRIBUTION OF TROUT

1944—1945

## BROOK TROUT FRY

## NEW LONDON COUNTY

Name and Location of Water	1944	1945
Denison Brook, Voluntown .....		10,000
Myron Kinnie Brook, Voluntown .....		9,950
		<hr/>
		19,950

## LITCHFIELD COUNTY

Bissell Brook, Morris .....	5,000	
Hill Brook, Litchfield .....	5,000	
Lenevig Brook, Roxbury .....	5,000	
Little Jacks Brook, Roxbury .....	5,000	
Mallory Brook, Washington .....	5,000	
Moosehorn Brook, Roxbury .....	5,000	
Pierce Brook, Roxbury .....	5,000	
Roxbury Brook, Roxbury .....	5,000	
Shears Brook, Morris .....	5,000	
Viningram Brook, Washington .....	5,000	
	<hr/>	
	50,000	

## TOLLAND COUNTY

Avery Brook, Somers .....	15,000	
Schanade Brook, Somers .....	15,000	
Thrasher Brook, Somers .....	15,000	
	<hr/>	
	45,000	
Total No. Brook Trout Fry .....	95,000	19,950

## BROOK TROUT FINGERLINGS

## HARTFORD COUNTY

Big Brook, Avon .....		5,000
Bunnell Brook, North Branch, Burlington .....	1,200	
Chidsey Brook, Avon .....		5,000
Devines Brook, Suffield .....		5,000
Farm Brook, South Windsor .....	2,000	
Fawn Brook, West Branch, Marlborough .....	3,000	
Iron Ore Brook, Bloomfield .....		5,000
Jim's Brook, Canton .....		5,000
Marshall Phelps Farm Brook, Windsor .....		5,000
Mill Brook, Windsor .....		5,000
Minister Brook, Simsbury .....		5,000
Muddy Brook, East Granby .....		3,300
Nod Brook, Avon .....		5,000
Podunk River, South Windsor .....	2,000	
Roaring Brook, Avon .....		5,000
State Line Brook, Suffield .....		5,000
Stratton Brook, Simsbury .....		5,000
Thompson Brook, Avon .....		5,000
Wash Brook, Bloomfield .....		2,500
Whittemore Brook, Suffield .....		5,000
	<hr/>	
	8,200	75,800

NEW HAVEN COUNTY		1944	1945
Name and Location of Water			
Bladens River, Woodbridge .....			5,000
Harbor Brook, Meriden .....			2,500
Harbor Brook, East Branch, Meriden .....			2,500
Heatons Brook, Hamden .....			1,200
Hopp Brook, Bethany .....			4,000
Jack's Brook, Oxford .....			5,000
Jeremey Brook, Southbury .....			5,000
Little River, Oxford .....			5,000
Meetinghouse Brook, Meriden .....			2,500
Parks Brook, Oxford .....			2,000
Pine Brook, Bethany .....			2,000
Sheppard Brook, Hamden .....			1,200
Six Mile Brook, Oxford .....			5,000
Towantic Brook, Oxford .....			10,000
Washington Brook, Seymour .....			2,000
Wilmot Brook, Hamden .....			4,919
			<hr/>
			59,819
NEW LONDON COUNTY			
Cranberry Meadow Brook, East Lyme .....	3,500		4,500
Dodge Pond, East Lyme .....			74,900
Fraser Brook, Salem .....	3,000		
Jordan Brook, Waterford .....	3,000		3,000
Meadow Brook, Colchester .....	2,500		
Savitsky Brook, Colchester .....	2,500		
Stony Brook, Montville .....	3,500		
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		18,000	82,400
FAIRFIELD COUNTY			
Booth Hill Brook, Trumbull .....			7,000
Cavanaugh's Brook, Newtown .....			2,000
Chestnut Hill Brook, Wilton .....	5,000		
Comstock Brook, Wilton .....	10,000		
Dibbles Brook, Bethel .....			3,000
Katz Ice Pond Brook, Trumbull .....			4,000
Lime Kiln Brook, Bethel .....			2,800
Mayapple Brook, Wilton .....	5,063		
Noroton River, New Canaan .....	5,000		
Otter Brook, Newtown .....			2,000
Pequonnock River, East Branch, Monroe .....			5,000
Pequonnock River, West Branch, Monroe .....			6,000
Pocono Brook, Newtown .....			3,000
Putnam Park Brook, Bethel .....			3,000
Rodericks Brook, Newtown .....			2,000
Wolf Pit Brook, Bethel .....			2,000
			<hr/>
		25,063	41,800
WINDHAM COUNTY			
Abington Brook, Pomfret .....			1,400
Angell Brook, Plainfield .....			2,500
Bark Meadow Brook, Pomfret .....			1,400
Beaver Dam Brook, Eastford .....			4,000
Bebbington Brook, Ashford .....			2,000
Blackwell Brook, Pomfret .....			1,400
Bradford Brook, Woodstock .....			1,400

Name and Location of Water	1944	1945
Carson Brook, Sterling		2,000
Crooked Brook, Sterling		2,000
Darling Pond Brook, Chaplin		2,000
Davis Brook, Canterbury		2,000
Deane Brook, Canterbury		2,000
Dixon Brook, Sterling		2,000
English Neighborhood Brook, Woodstock		1,400
Gallup Brook, Plainfield		1,600
Gardner Brook, Ashford		2,000
Goodwin Brook, Chaplin		1,670
Gorman Brook, Brooklyn		2,000
Knowlton Brook, Ashford		4,000
Lipps Brook, Ashford		2,000
Little Dam Tavern Brook, Putnam		1,400
Lyon Brook, Pomfret		1,708
Monty Brook, Scotland		2,000
Moritz Brook, Ashford		2,000
Masons Brook, Brooklyn		2,500
Peake Brook, Woodstock		1,400
Quaker Meetinghouse Brook, Pomfret		1,400
Sandy Brook, Brooklyn		2,000
Sap Tree Run Brook, Pomfret		1,400
Slovik Brook, Eastford		2,000
Squaw Hollow Brook, Ashford		2,000
Stone House Brook, Chaplin		3,000
Stones Brook, Eastford		3,000

66,578

LITCHFIELD COUNTY

Bantam River, West Branch, Litchfield	1,000	1,313
Bantam River Outlet, Litchfield		1,100
Bee Brook, Washington		3,000
Burton Brook, Salisbury		500
Butternut Brook, Litchfield	6,000	1,300
Butternut Brook, East Branch, Litchfield		322
Carsh Brook, Sharon		2,000
Compensating Reservoir, New Hartford	4,500	
Corban Brook, Cornwall		1,000
Fairchild Brook, Canaan		2,000
Furnace Brook, Cornwall	6,000	1,000
Hill Brook, Litchfield		2,000
Ivy Mt. Brook, Goshen		2,000
Lenevig Brook, Roxbury		3,000
Marshepaug River, Litchfield	400	1,200
Mill Brook, Sharon		2,500
Mohawk Brook, Goshen	4,000	3,165
Moosehorn Brook, Roxbury		2,000
Moulthrop Brook, Litchfield	500	1,200
Naugatuck River, East Branch, Winchester		3,000
Naugatuck River, West Branch, Torrington		3,000
Nepaug River, New Hartford		10,000
Pierce Brook, Roxbury		1,000
Pine Swamp Brook, Sharon		2,000
Potter Brook, Cornwall	5,000	2,000
Riga Brook, Salisbury		3,000
Roxbury Brook, Roxbury		2,000
Shepaug River, East Branch, Goshen and Litchfield	5,500	3,000
Spalding Brook, Norfolk		3,000
Spruce Swamp Brook, Salisbury		3,000
Toby Pond Brook, Norfolk		2,000

Name and Location of Water	1944	1945
Turrill Brook, Roxbury .....		1,000
Viningram Brook, Washington .....		2,000
Wangam Lake Brook, Canaan .....		3,000
White Hollow Brook, Sharon .....		2,000
Wickwire Brook, Cornwall .....	5,000	2,000
	<u>37,900</u>	<u>77,600</u>
<b>MIDDLESEX COUNTY</b>		
Baroni's Brook, Haddam .....	2,000	
Beaver Brook, Haddam .....	5,000	2,000
Bible Rock Brook, Middletown and Haddam .....	5,000	2,400
Camp Stewart Brook, East Hampton .....	3,500	
Candlewood Hill Brook, Haddam .....		2,000
Hammer Shop Brook, Cromwell .....		2,000
Indian River, Clinton and Killingworth .....		2,000
Pole Bridge Brook, Haddam .....	3,000	
Ponset Brook, Haddam .....	5,000	2,000
Saltpeter Brook, Haddam .....	5,000	
Sumner Brook, Middletown .....	5,000	2,000
Trout Brook, Westbrook .....		2,000
	<u>33,500</u>	<u>16,400</u>
<b>TOLLAND COUNTY</b>		
Aborn Brook, Ellington .....	3,000	
Ash Brook, Coventry .....		2,000
Avery Brook, Somers .....		10,000
Blackman's Brook, Andover .....	3,000	2,000
Burnap Brook, Andover .....	2,000	4,000
Bush Meadow Brook, Union .....		5,000
Cemetery Brook, Tolland .....	3,000	10,000
Charter's Brook, Tolland .....	2,000	3,000
Clark's Brook, Vernon .....	2,000	3,000
Codfish Falls Brook, Mansfield .....		2,000
Delphi Brook, Stafford .....		5,000
Grapevine Brook, Tolland .....	3,000	
Hop River, Bolton .....	4,000	4,000
Kalis Brook, Tolland .....	3,000	3,000
Kimball's Brook, Ellington .....		5,000
Macht Brook, Columbia .....	3,000	
May's Brook, Union .....		5,000
May's Brook Tributary, Union .....		5,000
Mitterholtzer Brook, Coventry .....		2,000
Muddy Brook, Ellington .....	3,000	10,000
Ogden Brook, Vernon .....		3,000
H. Pease Brook, Somers .....		5,000
Peck's Brook, Ellington .....	2,000	3,000
Pinney Brook, Ellington .....		3,000
Polk Hill Brook, Tolland .....	3,000	3,000
Raymond Brook, Hebron .....	2,500	
Salmon River, Hebron .....	3,000	
Schanade Brook, Somers .....		5,000
Staddle Brook, Andover .....	2,000	2,000
Tillinghast Brook, Vernon .....	2,000	
Town Brook, Vernon .....	2,000	3,000
Tucker Brook, Vernon .....	4,000	3,000
Tunnel Brook, Vernon .....		3,000
Wells Brook, Union .....		5,000
Woods Stream, Somers .....		5,000
	<u>51,500</u>	<u>123,000</u>
Total No. Brook Trout Fingerlings .....	174,163	543,397

## BROOK TROUT ADULTS

One Year

Name and Location of Water	1944	1945
<b>HARTFORD COUNTY</b>		
Avon Old Farms Pond, Avon .....		450
Belcher Brook, Berlin .....		100
Buckhorn Brook, Enfield .....	600	480
Bunnell Brook, North Branch, Burlington .....	390	300
Burlington Brook, Burlington .....	200	175
Cannons Brook, Suffield and Granby .....	225	325
Cherry Brook, Canton .....	464	450
Cold Brook, Glastonbury .....	375	296
Copper Mine Brook, Bristol and Burlington .....	700	500
Dark Hollow Brook, Glastonbury .....	200	160
Filley Brook, Bloomfield .....	100	
Freshwater Brook, Enfield .....	650	520
Hales Brook, Glastonbury .....	150	
Hatchery Brook, Berlin .....		100
Iron Ore Brook, Bloomfield .....	146	150
Johnsons Brook, South Windsor .....	200	160
Kettle Brook, Windsor Locks .....	125	916
Mill Brook, Windsor .....	275	250
Podunk River, South Windsor .....	250	250
Porter Brook, East Hartford .....	450	360
Roaring Brook, Glastonbury .....	775	670
Salmon Brook, Glastonbury .....	100	80
Salters Pond, Manchester .....	275	50
State Line Brook, Suffield .....	200	200
Stony Brook, Suffield .....	300	300
Stratton Brook, Simsbury .....	600	600
Trout Brook, West Hartford .....	600	1,100
Unionville Brook, Farmington .....		100
Wash Brook, Bloomfield .....	50	100
Whaples Brook, South Windsor .....	75	
	8,475	9,142
<b>NEW HAVEN COUNTY</b>		
Beaver Park Lagoon, New Haven .....	100	280
Bladens River, Woodbridge and Bethany .....	300	115
Cathole Brook, Meriden .....	50	50
Cotton Hollow Brook, Naugatuck and Bethany .....	300	120
Eight Mile Brook, Oxford .....	375	400
Five Mile Brook, North Haven .....		250
Harbor Brook, Meriden .....		70
Harbor Brook, East Branch, Meriden .....	455	455
Harbor Brook, North Branch, Meriden .....	50	40
Hop Brook, Naugatuck, Middlebury and Waterbury .....	475	480
Hopp Brook, Bethany .....	150	
Huzzle Guzzle Brook, Madison .....	50	40
Little River, Oxford .....	200	160
Long Meadow Brook, Middlebury .....	100	100
Mad River, Wolcott and Waterbury .....	310	250
Meetinghouse Brook, Meriden .....	50	90
Neck River, Madison .....	125	100
Prospect St. Brook, Prospect and Naugatuck .....	50	40
Shattuck Brook, Middlebury .....	50	
West River, Guilford .....	300	240
Wilmot Brook, Hamden .....	250	100
	3,740	3,380

## NEW LONDON COUNTY

Name and Location of Water	1944	1945
Anguilla Brook, Stonington .....	950	700
Copp's Brook, Stonington .....	550	400
Denison Brook, Voluntown .....	100	80
Exeter Brook, Lebanon .....	200	160
Fraser Brook, Salem .....	50	50
Great Meadow Brook, Voluntown .....	1,150	4,160
Harris Brook, Salem .....	100	75
Hunts Brook, Waterford .....		400
Indiantown Brook, Preston .....	100	100
Jordan Brook, Waterford .....	300	240
McCarthy's Brook, Franklin .....	75	
McGuire Brook, Groton .....	300	200
Meadow Brook, Colchester .....	250	200
Oxoboxo Brook, Montville .....	100	75
Pachaug River, Voluntown .....	750	500
Pease Brook, Lebanon .....	575	400
Pendleton Hill Brook, North Stonington .....	450	300
Shunock Brook, North Stonington .....	1,250	800
Stony Brook, Montville .....	400	300
Susquetonscut Brook, Franklin and Lebanon .....	450	355
Whitfords Brook, Stonington .....	850	600
Wilcox Brook, Griswold .....	500	
Wyassup Brook, North Stonington .....	100	50
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	9,550	10,145

## FAIRFIELD COUNTY

Ball Pond Brook, New Fairfield .....	1,200	960
East Swamp Brook, Danbury .....	550	440
Five Mile River, New Canaan .....	300	240
Lime Kiln Brook, Bethel .....	1,000	800
Mill River, Fairfield .....	500	400
Pond Brook, Newtown .....	400	320
Pootatuck River, Newtown .....	900	720
Rippowam River, Stamford .....	175	145
Saugatuck River, Weston .....		525
Titicus River, Ridgefield .....	500	400
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	5,525	4,950

## WINDHAM COUNTY

Bungee Brook, Eastford and Woodstock .....	200	160
Five Mile River, Putnam and Killingly .....	450	
Horse Brook, Plainfield .....	100	80
Kitt Brook, Canterbury .....	425	235
Little River, Putnam .....		205
Lyon Brook, Pomfret .....		150
Mary Brown Brook, Putnam .....	100	80
Mashamoquet Brook, Pomfret .....	600	340
Mill Brook, Plainfield .....	125	100
Muddy Brook, Woodstock .....	675	565
Quaduck Brook, Sterling .....	350	540
Still River, Eastford and Woodstock .....	575	580
Taylor Brook, Woodstock .....	375	300
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	3,975	3,335

LITCHFIELD COUNTY

Name and Location of Water	1944	1945
West Aspetuck River, New Milford .....		300
Bantam River, West Branch, Goshen .....		150
Beaver Brook, Barkhamsted .....	600	600
Branch Brook, Watertown and Thomaston .....	200	250
Butternut Brook, Litchfield .....	150	280
Cider Mill Brook, Bridgewater .....		200
Cobble Brook, Kent .....		200
Compensating Reservoir, Barkhamsted .....		9,879
Hancock Brook, Plymouth and Waterbury .....	550	440
Hollenbeck River, Canaan .....	200	
Ivy Mountain Brook, Goshen .....		200
Mad River, Winchester .....	200	160
Marshpaug River, Litchfield and Goshen .....	40	40
Mill Brook, Winchester .....	50	
Mill Brook, Sharon .....	125	100
Morgan Brook, New Hartford and Barkhamsted .....	600	600
Morrissey Brook, New Milford .....	300	240
Moulthrop Brook, Litchfield .....	75	
Naugatuck River, East Branch, Winchester and Torrington .....	125	100
Naugatuck River, West Branch, Torrington .....	125	100
Nepaug River, New Hartford .....	5,350	1,200
Northfield Brook, Litchfield and Thomaston .....	100	80
Riga Brook, Salisbury .....	100	160
Shepaug River, East Branch, Goshen and Litchfield .....	210	300
Spruce Swamp Brook, Salisbury .....	100	80
Ten Mile River, Sharon .....	150	
Town Farm Brook, New Milford .....		300
Wangum Lake Brook, Canaan .....	100	80

9,450

16,039

MIDDLESEX COUNTY

Asmunds Brook, Durham .....	50	50
Balls Brook, Durham .....	100	80
Beaver Brook, Haddam .....	150	100
Bible Rock Brook, Middletown and Haddam .....	375	470
Boones Brook, Westbrook .....	50	
Buck Brook, Portland .....	200	150
Candlewood Hill Brook, Haddam .....	150	365
Cox Brook, Portland .....	200	250
Deep River, Saybrook .....	100	150
Falls River, Essex .....		120
Fishing Brook, Old Saybrook .....		100
Fowler Brook, Durham .....	75	60
Hale's Brook, Portland .....		120
Hammershop Brook, Cromwell .....	175	140
Hersig Brook, Durham .....	50	40
Hurd Brook, Saybrook .....		150
Indian River, Killingworth and Clinton .....	250	120
Long Hill Brook, Middletown .....	150	160
Parmalee Brook, Durham .....	100	80
Patchogue Brook, Westbrook .....	100	80
Pine Brook, East Hampton .....	300	200
Ponset Brook, Haddam .....	150	350
Reservoir Brook, Portland .....	300	340
Saw Mill Brook, Durham .....	75	60
Sumner Brook, Middletown .....	75	60
Trout Brook, Westbrook .....	100	100
Wadsworth Brook, Durham .....	100	80

3,375

3,975

TOLLAND COUNTY		
Name and Location of Water	1944	1945
Alden Brook, Stafford .....		200
Avery Brook, Somers .....	1,000	
Crystal Lake Brook, Stafford .....	700	560
Eagleville Brook, Mansfield .....	50	
Fawn Brook, West Branch, Hebron .....	300	
Ginger Brook, Stafford .....	100	80
Gulf Stream, Somers .....	950	760
Hop River, Bolton and Andover .....	200	300
Macht Brook, Columbia .....	250	200
May's Brook, Union .....		200
Peck's Brook, Ellington .....	250	200
Raymond Brook, Hebron .....	350	275
Schanade Brook, Somers .....	500	
Skungamaug River, Coventry and Tolland .....	800	935
Storrs Pumping Station Pond, Mansfield .....	100	100
Tancanhoosen River, Vernon .....	950	760
Thrasher Brook, Somers .....	700	560
Walkers Reservoir, Lower Pond, Vernon .....	350	100
Watchaug Brook, Somers .....		100
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	7,550	5,330
No. of One Year Brook Trout Adults Planted in Streams Other Than State-controlled .....	51,640	56,296

## BROOK TROUT ADULTS

### Two-Year

#### HARTFORD COUNTY

Avon Old Farms Pond, Avon .....		300
Burlington Brook, Burlington .....	25	
Cannon's Brook, Suffield .....		100
Kettle Brook, Windsor Locks .....	276	336
Roaring Brook, Glastonbury .....	100	
Salters Pond, Manchester .....	429	500
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	830	1,236

#### NEW HAVEN COUNTY

Beaver Park Lagoon, New Haven .....	100	50
Five Mile Brook, North Haven .....		50
Harbor Brook, Meriden .....	27	30
Harbor Brook, East Branch, Meriden .....	100	70
Hop Brook, Middlebury, Naugatuck and Waterbury .....	200	100
Mad River, Wolcott and Waterbury .....	200	100
Meetinghouse Brook, Meriden .....		10
Wilmot Brook, Hamden .....	50	
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	677	410

#### NEW LONDON COUNTY

Anguilla Brook, Stonington and North Stonington .....	25	25
Copp's Brook, Stonington .....	25	25
Great Meadow Brook, Voluntown .....	25	25
Hunts Brook, Waterford .....		50
Jordan Brook, Waterford .....	50	25

Name and Location of Water	1944	1945
McCarthy's Brook, Franklin .....	25	
McGuire Brook, Groton .....	25	25
Pachaug River, Voluntown .....	50	25
Pease Brook, Lebanon .....	60	
Pendleton Hill Brook, North Stonington .....	25	25
Shunock Brook, North Stonington .....	25	50
Susquetonscut Brook, Lebanon .....	40	25
Whitfords Brook, Stonington .....	25	25
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	400	325
FAIRFIELD COUNTY		
Rippowam River, Stamford .....	250	125
Saugatuck River, Weston .....		255
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	250	380
LITCHFIELD COUNTY		
Hancock Brook, Plymouth and Waterbury .....	100	50
Nepaug River, New Hartford .....	100	50
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	200	100
MIDDLESEX COUNTY		
Bible Rock Brook, Middletown and Haddam.....	80	50
Buck Brook, Portland .....		10
Candlewood Hill Brook, Haddam .....		80
Cox Brook, Portland .....		35
Falls River, Essex .....		50
Fishing Brook, Old Saybrook .....		50
Hale's Brook, Portland .....		10
Hurd Brook, Saybrook .....		25
Long Hill Brook, Middletown .....		25
Ponset Brook, Haddam .....		40
Reservoir Brook, Portland .....		45
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	80	420
TOLLAND COUNTY		
Sadd's Mill Pond, Ellington .....		50
Skungamaug River, Coventry .....		25
Walker's Reservoir, Lower Pond, Vernon .....	500	660
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	500	735
No. of Two-Year Brook Trout Adults Planted in Streams Other Than State-controlled .....	2,937	3,606

**BROWN TROUT FRY**

HARTFORD COUNTY

Burlessons Brook, Suffield .....	10,000
Cannons Brook, Suffield .....	10,000
State Line Brook, Suffield .....	10,000
Whittemore Brook, Suffield .....	10,000
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	40,000

LITCHFIELD COUNTY

Bee Brook, Washington .....	10,000
Hill Brook, Litchfield .....	10,000
Lenevig Brook, Roxbury .....	10,000

Name and Location of Water	1944	1945
Mallory Brook, Washington .....		10,000
Viningram Brook, Washington .....		10,000
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		50,000
TOLLAND COUNTY		
Avery Brook, Somers .....		20,000
Thrasher Brook, Somers .....		20,000
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		40,000
Total No. Brown Trout Fry .....		130,000

### BROWN TROUT FINGERLINGS

#### HARTFORD COUNTY

Creamery Brook, Granby .....		2,800
Creamery Brook, East Granby .....		2,500
Cuishman Brook, Granby .....		2,500
Globe Hollow Brook, Manchester .....	12,000	
Mill Brook, Windsor .....	1,000	4,000
Salmon Brook, Granby .....		7,000
Spears Pond, Suffield .....		8,000
State Line Brook, Suffield .....	600	
Stony Brook, Suffield .....	1,000	
Wash Brook, Bloomfield .....		1,000
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	14,600	27,800

#### NEW HAVEN COUNTY

Hammonasset River and Tributaries, Madison .....		5,410
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#### NEW LONDON COUNTY

Bay Pond Brook, Colchester .....	8,000	6,600
Meadow Brook, Colchester .....	5,500	
Savitsky Brook, Colchester .....	2,500	6,600
Wolf Brook, Colchester .....	4,000	6,600
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	20,000	19,800

#### FAIRFIELD COUNTY

Chestnut Hill Brook, Wilton .....	12,500	
Comstock Brook, Wilton .....	15,750	
Mayapple Brook, Wilton .....	12,500	
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	40,750	

#### WINDHAM COUNTY

Angell Brook, Plainfield .....	2,000	
Attawaugan Brook, Killingly .....	1,500	
Bennett Brook, Canterbury .....	2,000	
Cady Brook, Putnam .....	1,500	
Coffey Brook, Canterbury .....	2,000	
Cold Spring Brook, Brooklyn .....	1,500	
Creamery Brook, Brooklyn .....	1,500	
Darby Brook, Canterbury .....	2,000	
Kelly Brook, Killingly .....	1,500	
Labelle Brook, Killingly .....	1,500	
Mary Brown Brook, Putnam .....	1,500	
Masons Brook, Brooklyn .....	1,500	
Obwebetuck Brook, Windham .....	2,500	

Name and Location of Water	1944	1945
Packerville Brook, Canterbury .....	2,000	
Spencer Pond Brook, Windham .....	2,000	
Sugar Brook, Plainfield .....	2,000	
Tatnic Brook, Brooklyn .....	1,500	

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 30,000

## MIDDLESEX COUNTY

Camp Stuart Brook, East Hampton .....	9,500	6,600
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## TOLLAND COUNTY

Avery Brook, Somers .....		8,000
Hop River, Bolton, Andover and Coventry .....		5,000
Middle River, Stafford .....		3,936
Schanade Brook, Somers .....		3,000
Thrasher Brook, Somers .....		4,000
Town Brook, Vernon .....	12,000	
Watchaug Brook, Somers .....		5,000

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 12,000

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 28,936

Total No. Brown Trout Fingerlings .....	126,850	88,546
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## BROWN TROUT ADULTS

## One Year

## HARTFORD COUNTY

Cannons Brook, Suffield .....		1,250
Scantic River, Enfield and East Windsor .....		2,672
State Line Brook, Suffield .....	500	1,250
Stony Brook, Suffield .....	1,030	

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 1,530

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 5,172

## TOLLAND COUNTY

Middle River, Stafford .....	750	1,000
No. of One Year Brown Trout Adults Planted in Streams Other Than State-controlled .....	2,280	6,172

## BROWN TROUT ADULTS

## Two-Year

## HARTFORD COUNTY

Hockanum River, Manchester .....		300
Podunk River, South Windsor .....	50	25
Roaring Brook, Glastonbury .....	900	567
Salters Pond, Manchester .....	975	600
Scantic River, East Windsor .....	400	250
Stony Brook, Suffield .....	300	490

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 2,625

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 2,232

## NEW HAVEN COUNTY

Andersons Brook, Madison .....	200	
Christensens Brook, Madison .....	500	
Hop River, Naugatuck and Middlebury .....	237	150
Mad River, Wolcott and Waterbury .....	375	250
Quinnipiac River, Meriden and Cheshire .....	1,150	725

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 2,462

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 1,125

NEW LONDON COUNTY		
Name and Location of Water	1944	1945
Four Mile River, East Lyme .....	150	75
FAIRFIELD COUNTY		
Rippowam River, Stamford .....	550	350
Saugatuck River, Weston .....		2,619
	550	2,969
WINDHAM COUNTY		
Five Mile River, Killingly and Putnam .....	400	252
Quinnebaug River, Canterbury .....	920	
	1,320	252
MIDDLESEX COUNTY		
Falls River, Essex .....		400
TOLLAND COUNTY		
Hop River, Andover and Bolton .....	200	125
Middle River, Stafford .....	100	100
Sadd's Mill Pond, Ellington .....		25
Skungamaug River, Coventry and Tolland .....	150	95
Walkers Reservoir, Lower Pond, Vernon.....	900	1,105
	1,350	1,450
No. of Two-Year Brown Trout Adults Planted in Streams Other Than State-controlled .....	8,457	8,503

### RAINBOW TROUT FINGERLINGS

FAIRFIELD COUNTY		
Ball Pond Brook, New Fairfield .....	6,546	
WINDHAM COUNTY		
Beaver Dam Brook, Eastford .....	3,000	
Branch Brook, Eastford .....	1,900	
Darling Pond Brook, Chaplin .....	1,000	
Slovik Brook, Eastford .....	1,000	
Stones Brook, Eastford .....	1,000	
Stone House Brook, Chaplin .....	1,000	
	8,900	
TOLLAND COUNTY		
Aborn Brook, Ellington .....		3,000
Cemetery Brook, Tolland .....		3,113
		6,113
Total No. Rainbow Trout Fingerlings .....	15,446	6,113

### RAINBOW TROUT ADULTS

#### One Year

HARTFORD COUNTY		
Salters Pond, Manchester .....	300	
TOLLAND COUNTY		
Walkers Reservoir, Lower Pond, Vernon .....	500	
No. of One-Year Rainbow Trout Adults Planted in Waters Other Than State-controlled .....	800	

## RAINBOW TROUT ADULTS

## Two-Year

HARTFORD COUNTY		1944	1945
Name and Location of Water			
Avon Old Farms Pond, Avon .....			208
NEW HAVEN COUNTY			
Beaver Park Lagoon, New Haven .....			150
LITCHFIELD COUNTY			
East Twin Lake, Salisbury .....			2,775
No. of Two-Year Rainbow Trout Adults Planted in Waters Other Than State-controlled .....			3,133

## LAKE TROUT FINGERLINGS

## LITCHFIELD COUNTY

East Twin Lake, Salisbury .....	3,396
Lake Wononscopomuc, Salisbury .....	3,348
	6,744
Total No. Lake Trout Fingerlings .....	6,744

## DISTRIBUTION IN STATE-CONTROLLED WATERS

## BROOK TROUT ADULTS

## One &amp; Two-Year

Name and Location of Water	One-Year	Two-Year	One-Year	Two-Year
	1944	1944	1945	1945
Angus Parks Pond, Glastonbury..				500
East Aspetuck River, Washington and New Milford .....	1,740	225	2,615	310
Bantam River Outlet, Litchfield and Morris .....	1,601	675	640	170
Beaver Brook, Franklin and Sprague .....	550	325	800	175
Bigelow Brook, Eastford and Ashford .....	1,450		1,120	
Blackberry River, Norfolk and North Canaan .....	1,400	550	1,400	275
Blackledge River, Colchester and Marlborough .....	875	1,500	1,400	850
Black Rock Pond, Watertown...	100			
Blackwell Brook, Brooklyn and Canterbury .....	950	150	1,075	185
Branford River, Branford and North Branford .....	1,103	378	850	200
Broad Brook, Ellington .....	1,500	800	1,700	500
Broad Brook, Preston .....	400	250	350	125
Chatfield Hollow Brook, Killing- worth .....	1,133	600	950	250
Coginchaug River, Durham .....	420	132	500	300
Dickinson Creek, Marlborough, Colchester and East Hampton	800	275	600	25

Name and Location of Water	1944	1944	1945	1945
	One-Year	Two-Year	One-Year	Two-Year
Eight Mile River, East Haddam..	350	200	780	100
Farm River, North Branford and East Haven .....	834	150	650	150
Farmington River, Canton and New Hartford .....	800	250	1,355	130
Farmington River, West Branch, Colebrook, Barkhamsted, Hartland and New Hartford.	5,900	1,800	8,600	900
Fenton River, Mansfield .....	2,050	100	1,000	50
Hammonasset River, Killingworth, Clinton and Madison..		590		200
Housatonic River, Sharon and Cornwall .....		3,330		1,600
Howell Pond, Hartland .....		650	100	100
Jeremy's River, Colchester .....	400	175	300	50
Kent Falls Brook, Kent .....	400	50	320	25
Lafayette Pond, Somers .....		1,442		1,350
Latimer Brook, East Lyme and Montville .....	700	928	1,050	440
Little River, Canterbury and Scotland .....	1,000		755	20
Macedonia Brook, Kent .....	1,000	100	1,000	50
Mill River, Hamden .....	934	700	1,670	600
Millane's Pond, Cromwell .....	800	520	420	300
Mt. Hope River, Mansfield and Ashford .....	1,450	75	800	50
Mt. Misery Brook, Voluntown...	3,797	400	3,464	300
Muddy River, North Haven, Wallingford and North Branford	530	390	925	200
Myron Kinnie Brook, Voluntown	1,600	350	1,400	250
Natchaug River, Eastford and Chaplin .....	600	3,420	4,654	2,146
Norwalk River, Wilton .....	1,600	1,275	1,600	645
Pequonnock River, Trumbull, Monroe and Bridgeport .....	900	1,116	1,540	660
Pomperaug River, Woodbury and Southbury .....	2,000	514	2,100	252
Roaring Brook, Stafford and Willington .....	2,515	1,828	3,399	1,762
Salmon Brook, East Branch, Granby .....	1,650	970	1,775	675
Salmon Brook, West Branch, Granby .....	50		165	10
Salmon River, Colchester and East Hampton .....		1,392	700	750
Sandy Brook, Colebrook .....	1,150	575	2,510	590
Scantic River, Somers .....	2,550	500	2,790	350
Shepaug River, Southbury and Roxbury .....	1,410	100	1,500	50
Snake Meadow Brook, Plainfield and Killingly .....	1,650	250	1,675	245
Trading Cove Brook, Bozrah, Norwich and Montville .....	600	125	400	65
Trumbull Reservoir, Trumbull...	7,500			
Weekepeemee River, Woodbury.	100		100	
West Hill Pond, New Hartford..		375	1,200	300
No. of Brook Trout Adults Planted in State-controlled Waters	60,842	30,500	64,697	19,230

## BROWN TROUT ADULTS

## One &amp; Two-Year

Name and Location of Water	1944		1945	
	One-Year	Two-Year	One-Year	Two-Year
Angus Parks Pond, Glastonbury..			1,600	600
East Aspetuck River, Washington and New Milford .....		700		650
Bantam River Outlet, Litchfield and Morris .....		50		50
Blackledge River, Marlborough and Colchester .....		2,450		1,500
Blackwell Brook, Brooklyn and Canterbury .....		1,336		1,410
Coginchaug River, Durham .....		925		200
Eight Mile River, East Haddam..		300		325
Farm River, North Branford and East Haven .....		3,481		300
Farmington River, East Granby, Simsbury, Avon, Canton, Farmington & New Hartford		2,267		3,014
Farmington River, West Branch, Barkhamsted .....		300		190
Hammonasset River, Clinton, Madison and Killingworth ..		4,279		3,900
Housatonic River, Sharon, Corn- wall, Bridgewater and New Milford .....		7,023		5,090
Jeremy's River, Colchester.....		260		125
Lafayette Pond, Somers .....				575
Latimer Brook, East Lyme and Montville .....		1,215		1,550
Little River, Canterbury .....		300		190
Mill River, Hamden .....		950		600
Millane's Pond, Cromwell .....		300		195
Muddy River, North Haven, Wal- lingford and North Branford		760		525
Norwalk River, Wilton .....		1,395		1,530
Pequonnock River, Trumbull ....		1,280		1,500
Pomperaug River, Woodbury and Southbury .....		1,660	404	1,736
Salmon Brook, East Branch, Granby .....		400		664
Salmon River, East Hampton and Colchester .....		1,615		1,000
Scantic River, Somers .....		1,800		1,350
Shepaug River, Roxbury and Southbury .....		1,208		1,218
Willimantic River, Willington and Mansfield .....		553		950
Yantic River, Bozrah .....		1,832		1,866
No. of Brown Trout Adults Plant- ed in State-Controlled Waters		38,639	2,004	32,803

## RAINBOW TROUT ADULTS

## One &amp; Two-Year

Name and Location of Water	1944		1945	
	One-Year	Two-Year	One-Year	Two-Year
Ball Pond, New Fairfield.....	2,000	4,634		2,274
Blackledge River, Marlborough & Colchester .....		500		350
Cream Hill Pond, Cornwall.....		2,795	2,352	2,375
Crystal Lake, Stafford & Ellington		5,449	1,698	9,089
Farmington River, East Granby, Simsbury, Avon, Farmington, Canton and New Hartford ..		1,600		1,600
Housatonic River, New Milford and Bridgewater .....				300
Howell Pond, Hartland .....		1,048		1,391
Millane's Pond, Cromwell .....				95
Natchaug River, Eastford and Chaplin .....		1,487		2,620
Norwalk River, Wilton .....		15		
Pequonnock River, Trumbull.....		15		
Quassapaug Pond, Middlebury....	11,052	1,940	1,371	2,748
Salmon Brook, East Branch Granby .....		12		
Salmon River, East Hampton and Colchester .....		375		525
Schreeder Pond, Killingworth....		800		800
Tunxis Pond, Hartland .....				1,070
West Hill Pond, New Hartford.	1,790	1,855	1,440	7,281
Lake Wononscopomuc, Salisbury	1,862	5,615	3,140	9,325
Yantic River, Bozrah .....		721	400	700
No. of Rainbow Trout Adults Planted in State-controlled Waters .....	16,704	28,861	10,401	42,543

## TOTAL NO. OF TROUT PLANTED:

In 1944 — 659,863

In 1945 — 1,037,394

## SUMMARY STATEMENT OF TROUT PLANTED

	1944	1945
<b>Fry</b>		
Brook Trout .....	95,000	19,950
Brown Trout .....		130,000
	95,000	149,950
<b>Fingerling</b>		
Brook Trout .....	174,163	543,397
Brown Trout .....	126,850	88,546
Rainbow Trout .....	15,446	6,113
Lake Trout .....	6,744	
	323,203	638,056
<b>Adults Planted in State-controlled Waters</b>		
Brook Trout—1 yr. ....	60,842	64,697
Brook Trout—2 yr. ....	30,500	19,230
Brown Trout—1 yr. ....		2,004

	1944	1945
Brown Trout—2 yr. ....	38,639	32,803
Rainbow Trout—1 yr. ....	16,704	10,401
Rainbow Trout—2 yr. ....	28,861	42,543
	<hr/>	<hr/>
Adults Planted in Other Waters	175,546	171,678
Brook Trout—1 yr. ....	51,640	56,296
Brook Trout—2 yr. ....	2,937	3,606
Brown Trout—1 yr. ....	2,280	6,172
Brown Trout—2 yr. ....	8,457	8,503
Rainbow Trout—1 yr. ....	800	
Rainbow Trout—2 yr. ....		3,133
	<hr/>	<hr/>
Total Adults Planted	66,114	77,710
Brook Trout—1 yr. ....	112,482	120,993
Brook Trout—2 yr. ....	33,437	22,836
Brown Trout—1 yr. ....	2,280	8,176
Brown Trout—2 yr. ....	47,096	41,306
Rainbow Trout—1 yr. ....	17,504	10,401
Rainbow Trout—2 yr. ....	28,861	45,676
	<hr/>	<hr/>
TOTALS OF ALL TROUT PLANTED .....	241,660	249,388
	659,863	1,037,394

DISTRIBUTION OF ADULT AND FINGERLING PONDFISHES  
SEASON OF 1944

Name of Water Stocked	Yellow Pickerel Perch	Black Bass	Calico Bass	Bull- heads	Shiners	Roach
American Institute for Deaf Pond .....	500		150	750		
West Hartford						
Ashland Pond .....	250		250	3,500	750	
Griswold						
Avon Old Farms Pond ... Avon	500		150	750		
Ball Pond .....					29,500	
New Fairfield						
Baltic Pond .....	1,500		1,500	3,000		200
Sprague						
Batterson Park Pond .... Farmington	9	3,239	5 L.M.	1,200	7,607	4,000
815						
Beach Pond .....	1,500		250	2,500	3,000	
Voluntown						
Beachland Pond . .... West Hartford	10	995	6 L.M.	4	113	425
Brewsters Pond .....	13	1,295	1 L.M.		269	742
Stratford						
Filley Pond .....	17	994	6 L.M.		156	785
Bloomfield						
Glasgo Pond .....	100			1,500	2,000	
Griswold						
Goodwin Park Pond .....	300		200	2,100	1,000	
Hartford						
Great Hill Pond .....	1,000		100	2,500	1,500	
Portland						
Green Falls Reservoir .... Voluntown				1,000	2,500	

Name of Water Stocked	Yellow Pickerel	Perch	Black Bass	Calico Bass	Bull- heads	Shiners	Roach
Hamburg Cove .....	2						
Lyme							
Hopeville Pond .....	100	500		100	2,000	1,000	
Griswold							
Keney Park Pond .....		300		200	2,100	1,000	
Hartford							
Long Pond .....	100	1,000		500	2,000	3,000	300
Ledyard							
Mirror Lake .....	27	444	6 L.M.		2,840		594
Meriden							
North Farms Reservoir ...	6	318	3 L.M.		783		178
Wallingford							
Palmer's Pond .....					2,800		
Middletown							
Peat Works Pond .....		1,500	50 S.M.	300	3,296		
Berlin & Meriden							
Porter Pond .....	200	500		100	2,000	1,000	
Sterling							
Quinnebaug River .....		500		250	2,000	1,000	
Griswold							
Lake Quonnapaug .....	68	2,500			2,500	900	2,500
Guilford							
Railroad Pond .....	28	515	5 L.M.		3,444		348
Berlin							
Rock Ledge Pond .....	50	250		250	500		
Groton							
Rogers Lake .....	9						
Lyme							
Round Pond .....						3,000	
Ridgefield							
Shaker Pond .....	9	1,250	11 L.M.	3	221		407
Enfield							
Somersville Pond .....	7	652	6 L.M.		2,493		123
Somers							
Stanley Quarter Pond ....		1,133	19 L.M.		262		305
New Britain							
State Line Pond .....	5	389	8 L.M.		1,868		202
Stafford							
Stillwater Pond .....	11	873	4 S.M.		8,486		421
Torrington							
Sunset Pond .....		604	5 L.M.	2	30		449
Essex							
Wangum Lake .....						24,250	
Canaan							
West Side Pond .....	18	417	4 L.M.		4,258		571
Goshen							
Williams Pond .....	100	2,500		1,000	5,000	3,500	800
Lebanon							
Willimantic Reservoir ....	100	1,500		500	2,500	2,500	
Bolton							
Wyassup Pond .....					900	1,800	
North Stonington							
TOTALS .....	989	29,718	85 L.M.	7,009	78,026	87,200	10,165
			54 S.M.				

Grand Total: 213,246

## SUMMARY STATEMENT OF PONDFISH PLANTED

Species	Fingerlings	Adults
Pickereel .....	100	889
Yellow Perch .....	11,600	18,118
Largemouth Black Bass .....		85
Smallmouth Black Bass .....		54
Calico Bass .....	2,750	4,259
Bullheads .....	32,100	45,926
Shiners .....	53,750	33,450
Roach .....		10,165
<b>TOTALS</b> .....	<b>100,300</b>	<b>112,946</b>

Grand Total: 213,246

DISTRIBUTION OF ADULT AND FINGERLING PONDFISHES  
SEASON OF 1945

Name of Water Stocked	Pickereel	Yellow Perch	Large-mouth Black Bass	Calico Bass	Bullheads	Roach
Beaver Pond .....	14	307	19		1,583	656
Meriden						
Black Pond .....	7	157	3		28	315
Middlefield						
Lake Brandegee .....	60	34	21	52	129	
Waterford						
Candlewood Lake .....	196	3,139			386	
Danbury		(white) 369				
Crystal Lake .....	7	215			1,060	362
Middletown						
Doerr's Pond .....	1	8	10		19	5
New Britain						
Filley Pond .....	9	1,023	26	31	1,075	1,009
Bloomfield						
Orcuttville Pond .....	23	418		5	796	525
Stafford						
Paderewski Park Pond .....	19	775	5		83	815
Plainville						
Permachie Pond .....	22	561	4	1	92	438
Middletown						
Perry Ice Co. Pond No. 2 .....	17	20	2	96	50	
Waterford						
Shaker Pond .....			500			
Enfield						
Somersville Pond .....			500			
Somers						
Stafford Reservoir .....	27	366	1,010	17	2,981	1,060
Stafford						
Stanley Quarter Pond .....	7	189	107		75	4
New Britain						
State Hospital Pond .....	23	828	5	6	158	1,165
Preston						
Stillwater Pond .....	48	831	15	13	911	1,000
Torrington						

Name of Water Stocked	Pickarel	Yellow Perch	Large-mouth Black Bass	Calico Bass	Bullheads	Roach
Williams Pond .....	20	1,672	10	14	1,102	337
Lebanon .....						
Winchester Lake .....	19	594	9	10	1,025	640
Winchester .....						
TOTALS .....	519	11,137	2,266	245	11,553	8,331
		(white) 369				
Grand Total: 34,420						

NOTE: These fish are all adults with the exception of 2,000 fingerling large-mouth black bass.

### DISTRIBUTION OF SMALLMOUTH BLACK BASS FRY

(Taken from Wangum Lake)

1945

Name of Water	Town	No. of Fry
NEW LONDON COUNTY		
Amos Lake	Preston .....	30,000
Gardner Lake	Salem .....	30,000
Long Pond	North Stonington .....	30,000
Uncas Pond	Lyme .....	30,000
		120,000
LITCHFIELD COUNTY		
Bantam Lake	Litchfield and Morris .....	30,000
Highland Lake	Winchester .....	30,000
		60,000
TOLLAND COUNTY		
Bolton Notch Pond	Bolton .....	30,000
Total Number of Smallmouth Black Bass Fry Planted .....		210,000

### DISTRIBUTION OF SMALLMOUTH BLACK BASS FRY

(Taken from Wangum Lake)

1946

HARTFORD COUNTY		
Lake Terramuggus	Marlborough .....	15,000
NEW LONDON COUNTY		
Gardner Lake	Salem .....	20,000
FAIRFIELD COUNTY		
Taunton Pond	Newtown .....	25,000
WINDHAM COUNTY		
Alexander Lake	Killingly .....	25,000
LITCHFIELD COUNTY		
Bantam Lake	Litchfield .....	15,000
North Spectacle Lake	Kent .....	25,000
Waramaug Lake	Washington .....	40,000
		80,000

MIDDLESEX COUNTY		
Name of Water	Town	No. of Fry
Pocotopaug Lake	East Hampton .....	15,000
TOLLAND COUNTY		
Waumgumbaug Lake	Coventry .....	50,000
Willimantic Reservoir	Bolton .....	75,000
		125,000
Total Number of Smallmouth Black Bass Fry Planted .....		305,000

1945  
DISTRIBUTION OF LOBSTERS  
4th Stage Lobsters

Place Where Released	Number
Andrews Island, Fishers Island Sound .....	30,000
Bridgeport, Long Island Sound .....	15,050
Clinton, Long Island Sound .....	30,000
Graves Point, Fishers Island Sound .....	21,000
Groton Long Point, Fishers Island Sound .....	10,000
Guilford, Long Island Sound .....	45,000
Indian Neck, Branford, Long Island Sound .....	10,000
Mystic Island, Fishers Island Sound .....	25,000
Niantic River, Waterford .....	21,000
Noank, Fishers Island Sound .....	12,165
Rowayton, Long Island Sound .....	21,000
Westbrook, Long Island Sound .....	20,000
Total .....	260,215

Adult Lobsters

Clinton, Long Island Sound .....	260
Guilford, Long Island Sound .....	200
Indian Neck, Branford, Long Island Sound .....	60
Noank, Fishers Island Sound .....	1,379
Rowayton, Long Island Sound .....	520
Westbrook, Long Island Sound .....	100
Total .....	2,519

1946  
DISTRIBUTION OF LOBSTERS  
4th Stage Lobsters

Place Where Released	Number
Bluff Point, Groton .....	13,250
Dodge Island, Stonington .....	37,000
Groton Long Point, Groton .....	20,000
Masons Island, Stonington .....	26,873
Mouse Island, Groton .....	18,000
Mystic Island, Stonington .....	5,521
Off Noank, Groton .....	10,363
Ram Island, Stonington .....	30,000
Rowayton, Norwalk .....	20,000
Whale Rock, Groton .....	42,807
Total .....	223,814

Adult Lobsters

Off Noank, Groton .....	1,000
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## DIVISION OF WILDLIFE PROTECTION AND LAW ENFORCEMENT

During the past biennium the most difficult problem of this division of the department was shortage of personnel. At the beginning of the biennium the Department was authorized to have the following full-time, permanent warden force: one Chief Warden; eight State Wardens; and sixteen Deputy Wardens—a total of twenty-five employees to cover the entire state. At that time the full-time force had been reduced by one state warden and six deputy wardens entering the armed forces, and by a resignation from one deputy warden, bringing the full-time force down to seventeen. During the biennium the force was further reduced by the retirement of State Warden Thomas G. Daniels and Deputy Warden James D. Healey, both of District 4, Fairfield Area; the death of Deputy Warden Edith A. Stoehr, District 2, Hartford Area, and the reclassification of Deputy Warden Douglas D. Moss, District 5, Tolland Area, to Aquatic Biologist. This reduced the force of full-time, trained and experienced personnel to a total of thirteen.

To supplement the permanent, full-time force, every possible effort was made to employ deputy wardens on a durational basis. However, the personnel requirements of the armed forces, industries engaged in war work, and of agriculturists, reduced the numbers of persons available for employment in less essential fields to an absolute minimum. This situation made it extremely difficult to maintain a warden force of sufficient size to render services promptly and efficiently on a pre-war level. A sincere effort was made to give sportsmen, landowners and other persons who call upon the department for service as prompt attention as conditions would permit. To accomplish this the wardens had to sacrifice most of the days which they would ordinarily have off and, in addition, they had to work many hours beyond their usual eight-hour day. This was done without additional compensation or complaint. It is remarkable that during the entire period of the war not one employee of this division of the department was attracted to private industry by the high wages being offered. One deputy resigned. He was a forester by training, was offered a position in this classification by the federal government, and accepted.

To supplement, the small, full-time force during pressure periods from the middle of April to the first of July and from the middle of October to the last of December, the Department employed thirty-four patrolmen to cover forty-five hunting areas and twenty patrolmen to cover thirty-six streams, lakes and ponds. This procedure has been in effect for many years. Patrolmen are employed on a per diem basis for a limited number of days during the periods mentioned above. The Department also employed some patrolmen to assist the warden staff in the winter game bird feeding program.

Before the close of the biennium the members of the Board, from actual experience in the field, became convinced that a total of twenty-five full-time employees for this division was inadequate, and they directed that the force be increased to a total of thirty-five. When these men have been trained in the special skills involved in the work of this division, the Warden Service will attain a higher degree of efficiency for rendering prompt service than has been possible in the past.

**Arrests and Warnings.** Arrests for the biennium totaled 281 with 261 or 93% convicted. Warnings for the same period totaled 1,303. These figures would indicate adherence to established Board policy of education among the beginners in the field of hunting, fishing and trapping and the policy of reasonable lenience for the uninformed, unintentional violator, as well as the policy of prosecuting deliberate, wilful violators.

On page 71 there are tables of arrests issued by districts for each of the fiscal periods of the biennium.

**Sportsmen Checked.** During the biennium wardens and patrolmen made 152,600 contacts with sportsmen in the field. Under the present check method definite information relating to fish, game, furbearers or predators possessed by the sportsmen at the time of check, the time spent by the individual to take the fish or game, and the areas, streams, lakes or ponds from which taken is carefully recorded by the warden or patrolmen. These reports are forwarded to the Hartford office where they are analyzed by the Fish Division and Game Division. This method is used to determine the take of fish and game per hour spent in the field. From the information thus obtained the Fish Division and the Game Division can determine whether or not a hunting or fishing area is producing satisfactorily. When it is found that production of desired species is not satisfactory, an investigation can be made in an effort to determine the cause.

The time spent by the warden in obtaining the requested information and the time contributed by the sportsmen to this cause should have genuine value for management purposes. The splendid cooperation of sportsmen in this program is keenly appreciated.

The enforcement angle does play an important role in this check procedure. Very few sportsmen will deliberately take illegal fish or game or fail to meet license requirements. However, there are sufficient instances of unintentional violations by the uninformed to provide opportunities for wildlife conservation education among this class as well as apprehending the deliberate, wilful violator.

**Pre-Season Patrol.** For several years complaints have been received concerning persons afield with rod or gun a few days prior to the opening of the trout season and the upland bird shooting season.

At these seasons the small force of full-time wardens has been devoting much of its time to the liberation of trout and pheasants. Due to limited funds for the employment of patrolmen, it had been the practice to spread their patrol days out to cover only the open season. During the biennium the patrol schedule for patrolmen was modified and all patrolmen were assigned to give intensive patrol to their particular hunting area or stream from the date of the first liberation of pheasants or trout. The pre-season patrol method was publicized and, to some extent, reduced this type of violation. When the full-time force is increased, pre-season patrol will be intensified.

**Posting.** During the biennium 25,650 aluminum posters for hunting areas were purchased. These are the first metal posters the Department has been able to purchase since the beginning of the war. It has been necessary to use cardboard for other posters due to the scarcity of metal and of a suitable grade of linen.

For many years the posting procedure for lakes and ponds under regulation involved printing a special poster for each such body of water on which were printed the regulations in effect. Each lake and pond so affected was listed in the fishing pamphlet with the notation, "See posters at pond for regulations". Under this procedure fishermen could not plan their trips in advance unless they had personal knowledge of the regulations in effect from previous experience. Under this plan it was also necessary for the Department to keep in stock many hundreds of posters that would become obsolete as regulations were changed. To overcome and simplify this problem, the posting plan for lakes and ponds under regulation was changed in 1946 by publication in the fishing pamphlet of all regulations in effect on each lake and pond under regulation. This made it possible to standardize the posters for these bodies of water with a poster that reads, "Regulated Fishing—See fishing pamphlet for regulations". This method brings to the attention of the angler that the lake or pond is under regulation and he is urged to obtain a fishing pamphlet and become familiar with the regulations which vary for each body of water due to fisheries management, or where special regulations relating to seasons or hours of fishing are in effect to meet the requirements of riparian owners. This new system, in effect for only one season, has received very favorable support from many lake and pond fishermen for the reason that they can now consult the fishing pamphlet in advance of a trip and plan accordingly. This plan will also save a considerable sum of money in the purchase of posters and in replacements.

During the biennium the method of posting bass spawning areas was also modified. Black bass may not be taken until after July 1. Many lakes and ponds which are managed to provide black bass fishing also support populations of other game fish for which the season opens on the third Saturday in April. In such ponds it is necessary to prohibit fishing of any kind in the spawning bed areas. To accomplish this it had been the practice for many years to use floating buoys

individually anchored by rope or wire along the outer edge of the spawning bed area. To overcome the problems of spawning area posting it was decided to try posting these areas along the shoreline. The maximum distance to be protected from the shoreline is usually under fifty feet. This method has been used for two seasons, is producing satisfactory results, and will be continued.

**Miscellaneous.** During the biennium duck hunting blinds have been built by the Warden Service for public use on a first come, first served basis on State-owned land at Great Island, Lord's Cove, Ragged Rock and Hammonasset. Similar facilities will be provided at other State-owned locations in the future.

In 1945 the Warden Service installed a completely new screen and frame at the outlet of Wononscopomuc Lake, Salisbury, to prevent escape of rainbow and lake trout.

Since the beginning of the war it has been extremely difficult, and in some cases impossible, to purchase items of equipment, motor vehicle and uniform supplies, and many other articles used in normal times. The majority of State-owned automobiles now being used by wardens have traveled well over the hundred thousand mile mark. Sufficient State-owned automobiles are not available for assignment to men who have returned to their former positions from the armed forces and new appointees will be required to furnish their own transportation.

### Post War Recommendations

- I. All expenses of the Division of Wildlife Protection and Law Enforcement, including personal services, equipment, supplies and materials and contractual services, should be paid from the General Fund of the State by appropriation for the following reasons:
  - A. Experience has shown that the members of this division devote a considerable portion of their time in the interest and to the benefit of all of the people of the state, specifically—(1) protective patrol of rural areas to abate the slaughter of domestic livestock by illegal deer hunters; (2) enforce Section 3167 relating to fishing in reservoirs; (3) enforce Section 1293c relating to registration of ponds as private waters; (4) enforce Section 6123 relating to exposure of poison; (5) protection of song and insectivorous birds and other non-game birds and animals; (6) enforce Section 3129 relating to injury to fences or the letting down of bars without replacing same; (7) enforce Section 3238 relating to obstructing streams. (Involves investigations for permits to build dams and the erection of weirs and racks.); (8) enforce Section 712h relating to crabs. (Licenses not required to take

blue crabs other than for sale.); (9) trap, capture, or destroy wild animals doing damage. (This relates to squirrels in homes, rabbits in gardens and nurseries, and snapping turtles in ponds not open to the public.); (10) erection of step-overs to protect fences and stone walls along streams; (11) wildlife conservation education among juvenile groups, rural landowners and sportsmen. Management practices that benefit wildlife are beneficial to soil; (12) assist in the abatement of pollution in streams, lakes and ponds; (13) assist in the prevention and suppression of forest fires; (14) protection of all wildlife resources for the benefit of future generations; (15) distribution and liberation of all birds, fish and other wildlife raised or purchased by the department, much of which is legally taken by persons exempt from license requirements.

- B. It has been the will of the people as indicated by legislative acts that many persons be exempt from license fee requirements relating to hunting and fishing. This group includes the following persons: (1) all landowners, lessees and their lineal descendants may hunt (except aliens, fish and trap on the lands or waters which they own or lease without a license; (2) all children under sixteen years of age may fish without a license. (See Section 699h.); (3) all children between the ages of twelve and sixteen may hunt without a license when accompanied by a licensed hunter over twenty-one. (See Section 688h); (4) all citizens of this State over sixty-five years of age may obtain a license to hunt or fish without the payment of any fee other than the recording fee of thirty-five cents; (5) accurate records relating to the numbers of persons who avail themselves of the privileges of hunting, fishing and trapping without the payment of a license fee, or the amount of fish and game taken by such persons, are not available. It is indisputable, however, that the number of persons is very large and it is reasonable to assume that their take of fish and game is substantial.

- II. Foremost leaders in the field of hunting and fishing throughout the United States have predicted that in the post-war period there will be a tremendous increase in the number of persons who will engage in hunting and fishing for recreation. During the war years many young men who served in the armed forces experienced, for the first time, working and living in the out-of-doors, the handling of firearms, and, in many instances, had their first introduction to fishing. It is reasonable to assume that many of these men will continue this interest. Present license sales show

a definite upward trend. The general department post-war program provides for greatly expanded facilities to accommodate the anticipated pressure and improvement of present resources. As this program moves forward, additional field work, much of it non law enforcement, will be required of the members of this division. Provision should be made for increasing personnel of this division as facilities are expanded.

- III. To perform the many and varied activities of this division requires a wide assortment of equipment, supplies and materials, including boats for patrol, planting of fish, salvage operations and surveys; outboard motors and gasoline cans, wooden crates for the transportation of pheasants, quail and other animals; box traps, turtle traps, and animal carrying boxes; trailers; outdoor furniture for recreational areas; lumber and other materials for step-overs, turnstiles, duck blinds and backings for posters; hundreds of metal, linen and cardboard posters; nails, tacks and staples; grain bins for grain planting and winter feeding programs; supplies and materials for State-owned automobiles and other equipment, including fifty-five gallon drums of oil and many other items. Most of the reconditioning of much of this equipment is done by the wardens and requires a considerable amount of paint and associated materials and tools with which to work. At the present time no storage or workshop facilities are furnished by the state. This equipment, supplies and materials, represent a considerable investment and provision should be made for proper storage and care.
- IV. A few years ago the Department made an intensive check of hunting, fishing and trapping activity on the Connecticut River from the Massachusetts line to the sound. The results were published in the twenty-fourth Biennial Report and show the wildlife resources of this major river are very satisfactory and could be used more extensively. Present use justifies considerable patrol from the middle of April to the close of the duck hunting season in December. With present equipment it is necessary to use rowboats and outboard motors which average seven to eight miles an hour. This method requires the time of several men, rowboats and motors and is not efficient. In addition, there is considerable coastal activity that should have attention, but the hazards of weather make the use of rowboats impracticable at all times.
- V. The members of this division are all field workers and spend a major portion of their time in rural and remote areas. From the time they leave their homes in the morning until they return in the evening it is improbable that they can be

reached. There are many instances when their services are urgently required, but action on complaints and other matters must be deferred due to lack of communications. During the last session of the Legislature the State Forestry Department and this department presented a joint program for equipping automobiles of the two departments with two-way radio communications. Necessary funds were not made available.

**Conclusion.** Sincere appreciation is extended to the landowners, sportsmen and state and municipal departments that cooperated so splendidly with the wardens during the difficult two-year period covered by this report.

Future efforts will be directed toward progressive and constructive programs and a sympathetic understanding of the wishes and problems of the landowners who open their property to public use, and the sportsmen who go afield with rod, gun and dog in pursuit of sport and recreation.

### Personnel

#### Division of Wildlife Protection and Law Enforcement

Thomas E. Rose, Chief Warden  
 Seth J. Monroe, State Warden  
 Raymond E. Piaggi, State Warden  
 Edward T. Bement, State Warden  
 Alfred J. Hunyadi, State Warden  
 Edward G. Wraight, State Warden  
 George A. Willis, Sr., State Warden  
 Harding F. Joray, State Warden  
 John E. Wood, State Warden  
 Charles H. Wells, Deputy Warden  
 John B. Spencer, Deputy Warden  
 Albert G. Csech, Deputy Warden  
 John C. Samalus, Deputy Warden  
 Eugene H. Johnson, Deputy Warden  
 Lawrence W. Theiss, Deputy Warden  
 Donald N. Deane, Deputy Warden  
 Frederick E. Lord, Deputy Warden  
 Albion W. Jack, Deputy Warden  
 John Griswold, Deputy Warden  
 Steve J. Muska, Deputy Warden  
 Charles I. Bagnall, Deputy Warden  
 Jerry F. Knight, Deputy Warden  
 Theodore Andersen, Deputy Warden  
 Charles F. Rice, Deputy Warden  
 Louis M. Bayer, Deputy Warden  
 Martin B. Hetherington, Deputy Warden  
 Roland J. Hotchkiss, Deputy Warden.

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1944 to June 30, 1945

District	Fish Law Arrests	Game Law Arrests	Total Arrests	Total Convictions	Percentage of Convictions	Fines Paid
No. 1 Litchfield .....	3	11	14	14	100%	\$ 410.00
No. 2 Hartford .....	9	6	15	14	93%	244.00
No. 3 New Haven .....	1	11	12	8	67%	142.00
No. 4 Fairfield .....	2	5	7	7	100%	141.00
No. 5 Tolland .....	3	12	15	15	100%	299.00
No. 6 Windham .....	2	21	23	21	91%	290.00
No. 7 New London .....	7	9	16	16	100%	153.00
No. 8 Middlesex .....	..	10	10	8	80%	45.00
Marine .....	2	..	2	2	100%	55.00
TOTALS .....	29	85	114	105	92%	\$1,779.00

In addition, 49 arrests were made by State Police and other Police Officers.

## ARRESTS FOR VIOLATIONS OF THE FISH AND GAME LAWS

July 1, 1945 to June 30, 1946

District	Fish Law Arrests	Game Law Arrests	Total Arrests	Total Convictions	Percentage of Convictions	Fines Paid
No. 1 Litchfield .....	16	14	30	28	93%	\$ 392.00
No. 2 Hartford .....	2	9	11	11	100%	104.00
No. 3 New Haven .....	13	19	32	29	90.5%	285.00
No. 4 Fairfield .....	3	12	15	15	100%	285.00
No. 5 Tolland .....	2	6	8	8	100%	141.00
No. 6 Windham .....	6	20	26	21	80.5%	379.00
No. 7 New London .....	9	7	16	15	93.5%	102.00
No. 8 Middlesex .....	2	21	23	23	100%	378.00
Marine .....	6	..	6	6	100%	230.00
TOTALS .....	59	108	167	156	93.4%	\$2,296.00

In addition, 43 arrests were made by State Police and other Police Officers.







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REPORT OF THE  
Board of Fisheries and Game  
1946-1947

*Reprint from*

DIGEST OF CONNECTICUT ADMINISTRATIVE  
REPORTS TO THE GOVERNOR '46-'47

Volume I

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## BOARD OF FISHERIES AND GAME

Violations of fish and game laws here are at pre-war level. Many states report violations at all time high; in some cases 100 per cent above pre-war records.

Number of hunting and fishing licenses issued increases yearly; now is 120,000.

Board of Fisheries and Game expended in fiscal year ending June 30, 1947, \$573,339.

The Board of Fisheries and Game consists of three Commissioners who determine the policies of the Department and are appointed by the Governor for terms of six years each. The present Commissioners, and the year in which their respective terms expire, are: Philip C. Barney, 1949; Francis L. Sheane, 1951; and Dr. John E. Flaherty, 1953. During the fiscal year ended June 30, 1947, the period covered by this report, Dr. Flaherty served as chairman of the Board. Commissioner Barney has been elected chairman for the two succeeding years.

The Superintendent of the Board, and administrative head of the Agency, who is appointed by the Commissioners, is Dr. Russell P. Hunter who has served in this capacity since 1938.

The Department's five sections, and their administrative heads, are: division of administration, Mildred K. Bartle, Executive Assistant; law enforcement division, Thomas E. Rose, Chief Warden; division of fish restoration, Frank N. Banning, Supervisor; division of fisheries management, Lyle M. Thorpe, Supervisor; and division of game restoration, Arroll L. Lamson, Supervisor.

The primary purpose of this State Agency is to furnish the best possible recreational facilities for hunting and fishing and at the same time to protect the basic stock of wild life for the benefit of future generations. Headquarters of the Department is in the State Office Building, Hartford. Section 680h of the 1945 Supplement to the General Statutes contains provision for the major powers under which the Board operates.

Operations to accomplish the Board's purposes include the stocking of waters and covers with fish and game, the acquisition by purchase, lease or agreement of lands and waters for public use, the improvement and management of the natural environment for wildlife, the enforcement of the laws designed to protect the stock of wildlife for posterity, and the education of the public in the work of the Department and the reasons for its policies.

The chief service which the Department renders is in providing a healthy recreation for an increasingly large number of interested people and in attempting through conservation measures to make it possible for future generations to enjoy this same type

of recreation. In accomplishing this service every effort is made to correlate the work of this Department with other related State and Federal agencies, such as the State Soil Conservation Advisory Committee, the State Water Commission, the State Health Department, the Connecticut Agricultural Experiment Station, the State Board of Mosquito Control and the United States Fish and Wildlife Service. Together, the State Park and Forest Commission and the State Board of Fisheries and Game form the Commission on Forests and Wildlife. This joint commission integrates land purchases of the two agencies and accomplishes a close correlation of their broad programs.

## ADVISORY COUNCIL

An organization of sixteen sportsmen, two from each county, known as the Advisory Council, meets with the Board and staff members once a month in an advisory capacity. Its purpose is to improve and expand contacts and cooperation between the Board and the sportsmen of the State. The Board frequently accepts the advice of this body and deeply appreciates the contribution in time and helpful suggestions made by its members.

## DIVISIONS

*The Division of Administration* is responsible for all business activities of the Agency, such as budgeting, accounting, personnel, purchasing, records, preparation of seasonal hunting and fishing pamphlets, the fish and game law book, and annual report.

*The Division of Wildlife Protection and Law Enforcement* is now composed of one chief warden, eight wardens and twenty-six deputy wardens. The staff was increased by eight men during the last fiscal year. The division is responsible for protecting all wildlife and enforcing laws and regulations relating to fish and game. Wildlife protection covers many fields of activity including advice to property owners to prevent damage by wildlife to crops and buildings. It also includes protection to wildlife against starvation, severe weather, fire, destruction of habitat, drought, flood, pollution, stream obstruction, erosion, disease and predators.

The warden service is responsible for the performance of many of the field operations of the Department in addition to the routine work of law enforcement. The wardens assist in the distribution of fish, the release of pheasants, the winter feeding of game birds, and the leasing of hunting and fishing areas. They report to the Water Commission on pollution of the waters of the State. Information on the catch of fish and the bag of game by sportsmen is gathered by wardens for use in wildlife management. Annual censuses of migratory waterfowl are carried out in cooperation with the U. S. Fish and Wildlife Service.

Education is the first corrective measure taken by the Department in all cases involving unintentional violations of the fish and game laws. During the past fiscal year 1,148 official warnings were issued. There were 303 arrests with 273 convictions, 9 cases nolleed, and 21 discharged, in this same period.

A careful analysis of records for several years indicates that violations in this State are at a pre-war level. Many states have reported that violations have reached an all-time high. In some instances an increase of 100 percent above pre-war records have been experienced.

*The Division of Fish Restoration* is now composed of 22 employees. This division is responsible for the artificial raising and distribution of trout and lobsters, the purchase and distribution of fish, and the maintenance of plant facilities.

During the calendar year 1946 a total of 394,864 trout weighing 41,591 pounds were raised in State hatcheries and distributed in waters open to public fishing. In addition, 83,068 legal length trout weighing 29,596 pounds were purchased from commercial dealers and distributed by the Department.

Pond fishes secured from rearing ponds located in Chaplin and Norwich and from commercial fishermen, totaling 129,483, were distributed in public waters.

A total of 305,000 smallmouth bass fry collected in cooperation with the United States Fish and Wildlife Service at Wangum Lake were distributed.

An area in the town of Franklin has been acquired in the past year for the development of a trout rearing station. Preliminary work on the development of this station has been started and it should not be long before trout can be produced there.

A freezer has been installed at the Kensington Hatchery with a capacity for approximately ten tons of fish food. Six pools for the rearing of trout have been rebuilt and the remainder will be rebuilt in the near future.

Plans have been completed for the installation of a new heating system at the Burlington Hatchery.

Three two-ton trucks and four one-half ton trucks have been acquired, making a total of thirteen trucks available for the distribution of trout and for general hatchery work.

Four distribution tanks have been replaced with new ones. Three new gasoline engine-powered circulating water pumps have been acquired which will make possible the installation of two pumps on each tank eliminating any chance of loss of trout through failure of water circulation while en route to streams and ponds.

At the State Lobster Hatchery 223,814 fourth stage lobsters were produced and planted, and 1,000 adult lobsters were distributed. Two new freezer units have been installed which will permit more food to be stored and eliminate frequent cartage of fresh food.

Connecticut's fishing industry makes an important contribution to the wealth of the State. The total value of the fishing fleet is in excess of \$1,000,000 and the total value of the catch for the year 1945 was above \$4,000,000. About 80 percent of the catch is landed in Connecticut, the remainder in Massachusetts, New York and Rhode Island.

This Department has been cooperating with the Bingham Oceanographic Laboratory of Yale in studies of the trawl fishery aimed at the conservation of existing stocks and improved utilization of the fish taken.

*The Division of Fisheries Management* was formed and given division status in April. In that sense it is a new division. However, the personnel consisting of the division head, two aquatic biologists and a research assistant, had been employed by the Department for sometime prior to that time.

Basically, this division is a fact-finding, planning and advisory group. Its primary function is to apply specialized knowledge to the manipulation of fish populations and human factors so as to make the water areas of the State produce their maximum crop.

The following specific activities are briefly mentioned because they show much promise in maintaining a sound, well-balanced and efficient fishery program in the future:

*Trout Program* — Fish Culturists are limited in the number of trout they can produce only by money and available suitable water. In recent years the trend has been to meet increased angling demand by stocking more and larger trout. A "put and take" program has evolved wherein larger streams are stocked with a greater poundage of trout than they would have produced even under primitive conditions. However, not all of these valuable trout are recovered by angling. The best information places the recovery at from 20-80 percent, depending upon the area stocked, the angling pressure, the weather during the angling season, etc. The disturbing point is that few of the trout which escape the hook the first year hold over to the next. No one knows why this should be so. However, circumstantial evidence indicates that there may be a physiological weakness in trout raised quickly to large size in hatcheries, which makes them a poor survival risk in wild waters.

A test stream and a test trout lake are needed where the survival of various strains, sizes and species of trout can be compared accurately. If the unexplained loss of trout can be corrected, it will place many more trout in the anglers' creel each year at no extra cost.

*Warm Water Fish Program* — The thinking of this generation about warm fish conservation has been conditioned by fish culturists. The belief that if man removes a fish someone must replace that fish is widely held by sportsmen. This conception ignores the fundamental process by which a crop of fish is produced by nature.

The fish in our lakes and ponds are a renewable resource and must be managed as such. Stocking is only one of the tools which management can use to help nature produce a better crop of game fishes. Weed control, fish population control, fertilizing, adjustment of the fishing effort and habitat improvement are all useful aids. We must use these tools in the future if warm water fishing is to be improved.

*"Farm Pond" Program* — Much has been written recently of the possibilities of producing large crops of fish in small areas through fertilizing. Many people have attempted to apply this procedure to small Connecticut ponds and almost without exception these attempts have met with failure. The reason is that most of the small Connecticut ponds are no farm ponds as that term is used in the South and West, where most of the fertilizing work has been done.

Our small ponds are, for the most part, not suitable for fertilizing because of their water supply, present fish population, and weed growth. However, the total fish producing potential of these small ponds is great although few are now producing to capacity because of poor management in the past.

We plan to work more with these small ponds in the future because they represent a considerable unexploited fish producing area.

*Consulting Service* — There is a great and increasing interest on the part of groups and individuals in improving fishing in their local areas. They turn to this department for help in solving technical fishery problems. We try to take care of all of these requests but are unable to because of other demands on our time and facilities. It seems advisable in the future to set up a regular extension service to take care of these requests for help.

*Fish Population Control* — Connecticut lakes and ponds have been stocked with a wide variety of fish over a long period of time. The resulting complex fish population, together with extremely heavy angling pressure, has unbalanced many waters to the point where they are no longer producing a satisfactory crop of game fishes. The solution is elimination or reduction of certain fractions of the fish populations so that the potential productivity of the lakes will be expressed more largely in game species.

It is obvious that much future effort must be expended on removing undesirable fish from our impounded waters.

*Weed Control* — For many years people believed rooted aquatic plants contributed greatly to the production of fish. We now know that the value of such vegetation was vastly overrated. In fact, in many cases, rooted vegetation may actually lower game fish production through tying up inorganic nutrients in a form unavailable to fish and through giving too much protective cover to young game fish and forage fish. In addition, excessive growths of water weeds render lakes less valuable for boating and swimming.

It appears that this division must include extensive weed control program in its future plans.

*Fertilizing* — Fertilizing large lakes and pools to increase fish production is a logical procedure. However, the details of how to get consistently good results from such fertilizing have not been worked out for Connecticut waters.

Experimental work on this problem is now in progress and will be continued. It seems likely that eventually the pond fish program will include systematic fertilizing of many water areas.

## GAME RESTORATION

*The Division of Game Restoration* is concerned with providing Connecticut sportsmen with acceptable hunting. This becomes increasingly difficult as the numbers of sportsmen afield continue to increase and the lands suitable for maintaining game populations constantly dwindle, with urbanization and industrial progress.

The work carried on by the division includes (1) purchase of land and planning of game liberations, (2) cooperative projects with sportsmen's organizations, (3) plans for the expenditure of Pittman-Robertson Federal Aid to Wildlife funds and supervision of projects, (4) supervision of private shooting preserves, (5) administration and improvement of State-owned, State-leased and State-regulated shooting lands, (6) assistance to groups who wish to promote game management, (7) licensing and inspection of game breeding industry, (8) administration of Litchfield-Morris and Shade Swamp Game Refuges, (9) statistical material pertaining to hunters' kill.

The game division works closely with the warden service in the following projects: (1) distribution of pheasants and quail to Department-controlled hunting grounds and covers open to public shooting, (2) the planting of grain patches to be left for game food during critical months, (3) the purchase and distribution of grain for winter feeding station programs, (4) checking on illegal possession of live game birds and quadrupeds, (5) the

posting and operation of State-leased and State-regulated shooting grounds, (6) gathering of game harvest and game population statistical figures.

During the last fiscal year \$70,517.54 was expended for game purchases and the following species and numbers were purchased and liberated.

Pheasants	Cocks	Hens	Total
During-Season (Dept. Regular)	10,405	30	10,435
Post-Season (Dept. Regular)	554	2,385	2,939
Six-Week Program	3,549	2,290	5,839
Day-Old Chick Program	976	978	1,954
Spring (Dept. Regular)	314	1,656	1,970
Six-Week Program	35	755	790
	15,833	8,094	23,927
Quail — 600			
Raccoon — 86			

The *Pittman-Robertson* section of the game division carries out such investigation and development work for game and the purchase of such sanctuary areas for game as funds permit.

During the past fiscal year problems of game management have been investigated and three-fourths of the cost of this work has been borne by the Federal government. The sum of \$6,537.06 was allocated to the State as the Federal share of such projects for the 1946-47 fiscal year.

During the same period there have been two significant developments pertaining to the *Pittman-Robertson* program. The method of allocating Federal funds to the states has been changed so that the minimum amount that Connecticut will receive has been increased from about \$2,600 for each million appropriated to nearly \$5,000. The second has been the language of the current appropriation bill which appropriates not a given figure but the amount that accrued from the earmarked tax funds. Appropriations in the past have never exceeded two and three-quarter millions, while the amount of the collected tax has averaged much larger. The amount accruing during the first ten months of the 1946-47 fiscal year has been certified as \$7,370,887.54, of which Connecticut's share is \$33,681.08.

It appears that in the future sufficient funds will be available for *Pittman-Robertson* work to investigate any pressing management problems of the Division and, in addition, such development work and land acquisition as falls within the scope of the act.

A cooperative project with the University of Connecticut in the study of salt water marsh restoration has been carried on during two years at Barn Island, Stonington. This study is directed at the improvement of habitat for waterfowl correlated with mosquito control. It is hoped that the methods developed here will be applicable to other salt marshes in the State.

## FUTURE DEVELOPMENT

Since 1942 there has been a continuous increase in the sale of hunting and fishing licenses. The number issued has risen from 70,000 to about 120,000. If license sales continue at the present level, increased facilities for law enforcement, fish and game distribution and the improvement of conditions for fish and game must be made available.

Buildings for the storage and maintenance of equipment are needed in the eight warden districts.

Radio communication for law enforcement and forest fire protection in cooperation with the Forestry Department has been requested. This facility would increase the efficiency of both departments. We will continue to make plans for such an installation, and will present a request for authorization.

Additional inboard motor boats for the patrol of our coastal and inland waters are required for the enforcement of fish and game laws. At the present time we are particularly handicapped in the marine areas through the lack of proper equipment.

The extensive stocking program of trout and pheasants, on which our Department spends the major portion of its funds, has come to be regarded as necessary for the maintenance of annual hunting and fishing under Connecticut conditions. Investigations of the results of stocking indicate that the release of fish and game animals in areas which are unsuited to their requirements for food, shelter and reproduction is a waste of time and money. Fish and game production under natural conditions is a by-product of proper land use.

## IMPORTANCE OF CONSERVATION

In the production of both hunting and fishing we must pursue a long-range parallel objective of conserving our natural resources of soil and water by proper agricultural and forestry practices so that the soil on which we depend will be saved and improved and the waters which we must have for domestic use, agriculture and industry will be conserved. This calls for planning on the basis of watershed areas on a broad scope which will give consideration to the requirements of agriculture, municipalities and industries.

The control of water pollution and soil erosion will pay dividends in the improvement of recreational facilities and land values.

We are planning for a closer contact with landowners and sportsmen's groups to correlate their programs with those of the department. For this purpose more personnel will be required.

Investigational work toward the natural production of fish and game is being carried on as rapidly as limited funds will permit. This program should be continued and expanded to a greater

degree. It is always easier to obtain money for stocking additional fish and game than for the determination of the failure of the stocking.

Every biennial report issued by this department has stressed the importance of education of the public in the aims and practices of conservation. This department does not have legislative authority for engaging in an organized educational program. Authority should be granted and funds appropriated for the publication of an attractive monthly bulletin for distribution to those interested in conservation of wild life. Added features of an educational program can be provided as funds are available.

This department prepared a plan for post-war development which is detailed in our twenty-sixth biennial report for 1944-46. The plan will again be submitted to the Legislature at the next Assembly. The plans call for additional public recreational facilities, stocking of fish and game and the improvement of the physical features of our State for the people whose heritage it is. An environment that is good for fish and game is good for people.

## FINANCIAL STATEMENT 1946-1947

### MEANS OF FINANCING

Working Balances —		
at Beginning of Fiscal Year:		
Game Fund		\$ 22,776.90
Inland Fish Fund		138,127.72
Marine Fish Fund		3,945.24
Receipts from Sale of Angling and Hunting Licenses and Other Sources:		
Game Fund		160,497.17
Inland Fish Fund		223,071.17
Marine Fish Fund		5,638.20
Appropriation from General Fund		160,244.03
Total Cash Resources		\$714,300.43

### EXPENDITURES

Game Fund	\$145,309.32	
Inland Fish Fund	280,798.25	
Marine Fund	3,861.88	
General Fund	143,370.25	
Total Expenditures		\$573,339.70

### Balances on Hand at End of Year:

Game Fund	\$ 37,964.75
Inland Fish Fund	80,400.64
Marine Fish Fund	5,721.56
General Fund	*16,873.78

Total Balances 140,960.73

Totals \$714,300.43

Capital Outlay Including Equipment	\$ 97,079.22
Total Annual Recurring Expenditures	476,260.48

\* Includes \$3,220.61 — Statutory appropriation made exclusively for purchase of egg lobsters.

\$4,791.63 for capital expenditures held over for use in year 1947-48.

## PROPERTIES

The following properties are under the supervision of this agency:

Name and Location	Valuation of Land and Buildings and Permanent Improvements
Trout Hatchery — Burlington	\$ 77,710.00
Trout Hatchery — Windsor Locks	19,930.00
Trout Rearing Station — Kensington	38,850.00
Pachaug Rearing Station	5,200.00
Lobster Hatchery — Groton	43,800.00
Smelt Hatchery — Westport	500.00
Shade Swamp Sanctuary	51,866.00
Assekonk Swamp Area — Stonington	4,400.00
Other Land Owned by Department	61,544.00
	\$303,800.00
 Total Inventory Including Personal Property, Equipment and Livestock	 \$472,239.78
Permanent Positions Authorized	75
Permanent Positions Filled	75
Temporary Positions Authorized	65
Temporary Positions Filled	33



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REPORT OF THE

Fisheries and Game  
Department

1947 - 1948

*Reprint from*

DIGEST OF CONNECTICUT ADMINISTRATIVE  
REPORTS TO THE GOVERNOR '47-'48

*Volume II*

*Published at*

HARTFORD, CONNECTICUT

1949

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## BOARD OF FISHERIES AND GAME

There are approximately 1,100 lakes and ponds and hundreds of streams in Connecticut. Practically all of this water provides some degree of fishing. The Department has 88 lakes and ponds and 49 streams under regulation and listed in the annually published fishing pamphlet. Regulated waters receive the bulk of trout and pond fishes distributed by the Department. During 1947 the Department regulated hunting in 45 areas, totaling 212,553 acres; also in 22 State forests, totaling 103,228 acres. From fishermen and hunters the State collected, in the fiscal year '47-'48, more than \$425,000, which went into the Department's funds.

The State Board of Fisheries and Game lost one of its best loved members in the death of Commissioner Francis L. Sheane in December 1947. He was widely known as an ardent sportsman and conservationist and was a tireless worker for the improvement of hunting and fishing conditions. At the time of his death he was the Chairman of the Commission on Forests and Wild Life. He regarded his work on both Commissions as a treasured privilege and worked constantly for the acquisition and improvement of the State's permanent recreational areas, as well as for the application of the broad principles of the control of soil erosion, reforestation, stream stabilization and pollution abatement. All who came in contact with him were impressed with his sincerity and breadth of vision.

The Board is made up of three members appointed by the Governor for six year terms. The present Chairman is P. C. Barney of Farmington, who will complete his second term of appointment in 1949; John P. Montgomery, Mount Carmel, fills the unexpired term of F. L. Sheane until 1951; Dr. John E. Flaherty of Rockville whose second term of appointment expires 1953.

The Superintendent appointed by the Board is Dr. R. P. Hunter.

During the past year Miss M. K. Bartle, Executive Assistant retired after 28 years of service in the Department. Her position was filled by the appointment of Roger C. Norling who now heads the Division of Administration. The other sections of the Department and their administrative heads are: Division of Wildlife Protection and Law Enforcement, Thomas E. Rose, Chief Warden; Division of Fish Restoration, Frank N. Banning, Supervisor; Division of Fisheries Management, Lyle M. Thorpe; Division of Game Restoration, Arroll L. Lamson, Supervisor.

### ADVISORY COUNCIL

The Sportsmen's Advisory Council to the State Board of Fisheries and Game was first organized in 1932 and has served continuously since that time as a means of effecting a close relation between the sportsmen

and the Board. The Council meets monthly with representatives of the Department. Two members from each county serve 4 year terms after election to membership by the Council. The present roster is: *Litchfield*: Henry J. Heiftje, and E. A. Ambler; *Hartford*: Arthur Bissell, Suffield, and Kenneth Adam, Wethersfield; *New Haven*: Dr. J. F. Quinn, New Haven, and George Heinold, Madison; *Fairfield*: Howard Wilson, Norwalk, and Frederick A. Carley, Danbury; *Tolland*: George P. Hall, Woodstock Valley, and Kenneth Little, Rockville; *Windham*: Leon S. Robbins, Thompson, and Raymond Chamberlain, No. Windham; *New London*: Leonard Partridge, Norwich, and Dr. Willard J. Morse, New London; *Middlesex*: Albert Santi, Ivoryton, and Harold Burham, Middlefield.

## DIVISIONS

The Division of Administration (State Office Building, Hartford) handles the business activities of the agency, budgeting, accounting, personnel, purchasing and the preparation of certain publications. The increase in volume of this type of work makes it advisable to increase our staff in this division by the addition of one accountant auditor in order to allow the preparation of the cost records and inventory controls necessary for the proper maintenance of field operations.

### DIVISION OF WILDLIFE PROTECTION AND LAW ENFORCEMENT

This division is charged with the responsibility of protecting all wildlife and enforcing the laws and regulations relating to fish, game and crustacea.

Permanent, full-time employees of the division are one chief warden, eight state wardens, and twenty-six deputy wardens. For many years the force has been supplemented during the hunting and angling seasons by the employment of patrolmen on a part-time, per diem basis. Patrolman employment has been reduced each year, although license sales have almost doubled and hunting and fishing facilities have been expanded. During the 1946 angling season twenty patrolmen were employed. In 1947 this force was reduced to thirteen and in 1948 it was reduced to five. Patrolman employment on hunting areas formerly averaged thirty-four. In 1947 the number was reduced to sixteen.

There are approximately eleven hundred lakes and ponds and hundreds of streams in the state. Practically all of this water provides some degree of fishing. The Department has eighty-eight lakes and ponds and forty-nine streams under regulation and listed in the annually published fishing pamphlet. Regulated waters receive the bulk of trout and pond fishes distributed by the Department.

During the 1947 hunting season the Department regulated hunting on forty-five areas with a total of 212,553 acres. These areas are State-owned, State-leased, or obtained by agreement without a lease fee. In addition the Department regulated hunting in twenty-two State forests with a total of 103,228 acres, bringing the total to 315,781 acres of land open to regulated public hunting and listed in the annually published hunting pamphlet. State forests are principally suited to provide hunting for grouse, rabbits, squirrel, raccoon and fox. The other areas are selected

principally for their ability to support pheasants and receive the bulk of such birds liberated.

An attempt is made to give some patrol to all lands and waters where hunting and fishing takes place. Protective patrol obligations to land-owners on regulated areas and required management data for the Department divert patrol efforts to these areas.

The heaviest stocking of fish and birds takes place just before and during the open seasons. As the wardens do all of the actual stocking of all fish and birds, it is physically impossible for them to give adequate attention to routine patrol and enforcement during the stocking periods. Attendance records show the staff is inadequate to meet normal demands. Throughout the year wardens must work many hours beyond the required eight-hour day. In pressure periods the situation is worse.

Except for the reduction in patrolman personnel, there have been no changes in the personnel set-up or operational functions during the past fiscal year.

### WINTER HARD ON WILD LIFE

A very serious situation prevailed for wild life during the winter of 1947-48 as a result of repeated heavy falls of snow which kept the ground continuously covered until spring. Wardens of this Department examined the remains of 113 deer killed by roaming dogs. Seventy-two of these were killed in Litchfield County, fifty-four in the Town of Kent. There must have been many more throughout the state which were not detected. In deep crusted snow, deer flounder when pursued by dogs able to remain on the crusted surface. These kills were anticipated and every effort was made over the radio and through the press to make the situation known to dog owners. Pleas were made that they confine their dogs during the critical period. All dog wardens were alerted by the Department of Farms and Markets under which they serve, and, had they been less vigilant, wild life loss would have been substantially greater.

The wardens of this Department devoted a considerable portion of their time to the artificial feeding of game birds. Other game animals are able to sustain themselves under such abnormal conditions.

The first arrest in this state for illegal hunting from an airplane took place this year, and the offender was convicted. During the fiscal year covered by this report, a total of 1125 warnings were issued. There were 234 arrests with 220, or 94 per cent, convicted. In addition 51 arrests were made by the State Police Department and other enforcement officers.

Recommendations for future development of this division are the same as published for the fiscal year 1946-47. It is requested that serious consideration be given these recommendations.

### DIVISION OF FISH RESTORATION

This division composed of 21 employees, is responsible for the rearing and distribution of trout, lobsters and warm water fishes, and the maintenance of plant facilities.

During the year 1947 a total of 784,620 trout weighing 59,200 pounds were raised and distributed from State hatcheries in waters open to public

fishing. In addition, 117,400 legal length trout weighing 54,180 pounds, purchased from commercial hatcheries, were distributed by the Department.

Pond fishes, secured principally from commercial fishermen, during 1947, totalled 76,600. These were distributed in ponds that provided fishing for persons under 16 years of age.

A total of 180,000 small mouth bass fry collected in cooperation with the U. S. Fish and Wildlife Service at Wangum Lake were distributed.

Two million five hundred thousand pike perch fry hatched from eggs secured from the U. S. Fish and Wildlife Service were distributed.

An area in the Town of Franklin is under development as a trout rearing station, pools are being completed, and trout will be placed in same for rearing this year.

A new heating system has been installed at the Burlington hatchery. At the State lobster hatchery 303,700 fourth or diving stage lobsters were reared and released along the Connecticut coast during 1947. Also, 1,236 adult lobsters were returned to the waters from whence taken after hatching off their eggs.

Six trout rearing pools have been rebuilt at the Kensington hatchery during the past year.

Plans are being made for the installation of a larger freezing unit at the Burlington hatchery; also plans for the replacement of water supply and sewer lines to all pools below the hatchery.

#### FISHERIES MANAGEMENT DIVISION

In the preceding report it was pointed out that this division performed a fact-finding and advisory function in connection with the management of water areas for fish production. The background information which it is necessary for the Department to have is secured in a variety of ways. Most state conservation departments, various Federal agencies, and many universities sponsor studies and investigations relating to fishery management; thus many people contribute to the accumulation of general knowledge in the field. However, general knowledge of fisheries management can rarely be applied to the improvement of fishing in any one locality until field studies of that locality's peculiar conditions have been made. Ultimately, each state must take steps to solve most of its own fishery problems; Connecticut is no exception.

The Fisheries Management Division has occupied itself with field investigations aimed at solving some of the State's fishery problems. For a number of years we have felt that the lakes and ponds of the state were not producing their fullest measure of recreational fishing due to lack of sound management and we have been making field studies to discover ways of improving our techniques.

These studies are made by the lake and pond survey unit which is in the field each year from June 15th to September 15th. It is composed of specialists drawn from various universities who are employed on a temporary basis and is directed by our permanent aquatic biologists. This work has been going on since 1938, except during the war years. Most of the larger and more important fishing lakes throughout the state have received attention, and the Survey Unit is now engaged in a systematic coverage of all impoundments by warden districts. To date, District 1

(Litchfield Area), District 2 (Hartford Area), and District 5 (Tolland Area) have been so studied, and the survey unit is currently working in District 6 (Windham Area).

The information gathered by the survey is applied to the management of the waters studied as soon as is possible. We believe that the management programs resulting from these studies have, in general, been successful by making the waters produce a larger annual crop of desirable game species. However, we also feel that the tremendous increase in the number of anglers in recent years have largely soaked up these gains and thus obscured the improvement for the average fisherman.

In 1947 a field group began a wild life survey of the Connecticut River valley using the 1936 high water mark as the limits of the area to be covered. This study will be the subject of a special report. Potentially, the Connecticut River seems to be the most important inland fish-producing area in the state. Breeding stocks of most of the warm water game species which inhabit our lakes and ponds are found here. Great northern pike are established and provide good fishing in a few restricted localities. Eels, carp, and suckers are taken by commercial fishermen. Striped bass migrate at least to Hartford on occasion. A considerable number were caught in alewife nets at South Glastonbury this spring. The tremendous alewife run was exploited on an important commercial scale in 1948 for the first time in many years. The Connecticut River shad run is as much a part of Connecticut history as the Charter Oak. In addition to its commercial importance, the sport fishery for shad at the Enfield Dam is the most famous such area in the country.

Despite the number and kinds of fish now using the river, the picture of the river as a fish-producing area is not particularly rosy. The production of resident game and panfish, i.e., yellow perch, calico bass, chain pickerel, great northern pike, bullheads and largemouth black bass, seems far below what it should be. It is true that at certain times, noticeably during the spawning season, tons of these species can be and have been taken in or near the principal coves. The survey crew used a variety of nets to collect fish from the Massachusetts line to the Sound. The data so gathered indicated a rather sparse total fish population which concentrates periodically to give the impression of tremendous fish production in certain areas.

Early in the spring of 1948 trap nets were used on the spawning run of yellow perch, chain pickerel and great northern pike in Wethersfield Cove and Keeney Cove, Glastonbury. At that time the coves were teeming with fish. Nearly three thousand fish were handled by the investigators of which number nearly two thousand were tagged and released. Tagged great northern pike and pickerel have been recovered by fishermen from Middletown to Hartford. Tagged yellow perch have been recovered from the Farmington River to Old Saybrook. Incidentally, the yellow perch which was caught at Old Saybrook forty-four days after being tagged and released in Wethersfield Cove establishes some sort of a record for this species so far as we know.

The wide dispersal of tagged fish does not necessarily prove that the fish spawning in Keeney and Wethersfield Coves were originally so dispersed. However, such an assumption is as logical as any other and does appear consistent with our collecting data.

Any appraisal of the Connecticut River as a wild life producing area should include some judgment as to the limiting effects of pollution. Unfortunately, this is exceedingly hard to do, and for two reasons: (1) there are no accurate figures of wild life production under primitive conditions; (2) no one seems to know the true nature and extent of the pollution carried by the river. It seems high time that at least a complete inventory of pollutants be made as the first step in an abatement program. Connecticut people apparently have felt for years that Massachusetts should be blamed for the poor condition of the river. Our observations indicate that this view has become somewhat out-of-date. The river at the Massachusetts-Connecticut line is carrying some pollution, but it does not seem serious from a fish-producing standpoint. No, the worst sections of our river are caused by the sewage outfalls of Connecticut communities; the chemicals and factory wastes are from Connecticut industries; the floating oil and the oil sludge on the bottom are from Connecticut petroleum storage tanks and from tankers plying the river; the shifting sands that fill the channel and smother bottom fish food were once Connecticut farms.

Some progress toward cleaning up the river has been made but it is only a start. The Connecticut is a lovely river, rich in scenic beauty and capable of providing abundant fishing, swimming, boating, and picnicking for thousands of people. Its potentialities for producing out-of-door recreation will be realized only so soon as the public really wants it.

Water fertilization and aquatic weed control seem quite different subjects, but in this state they are so interrelated in application that it is hard to discuss them separately. Most of the small ponds which might lend themselves to fertilization have rooted aquatic plants present. Unless these rooted plants are controlled they take up any plant nutrients which are added to the water. The result is to make the pond more weed choked and with no increase in fish production.

Under ideal conditions, early and heavy fertilization may cause a "bloom" of algae sufficiently thick to shade out the rooted plants. When this is accomplished all the plant nutrients then become available to the algae which is the basic food supply of all fish. The result is much increased fish production.

However, many ponds do not have ideal conditions for fertilizing. A typical situation is where a pond is created by damming a fast run-off stream. In spring there would be too much water passing through the pond to warrant fertilization. However, later in the summer the inflow might be quite low, giving good fertilization conditions. By this time though, the rooted plants have started to grow and any fertilizers added would only promote their growth. Under these circumstances, the rooted plants must be controlled before fertilization is practicable.

For the past three years we have been investigating the problems of fertilizing and weed control. We have been able to control rooted aquatics and increase fish production with fertilizer alone in our experimental pond which presents ideal conditions for this work. Progress in weed control alone is not so encouraging. It appears that the problem must be solved by some chemical. We have found no substance as yet which will give good weed control at a reasonable cost and which is not harmful to fish or fish food organisms. The need for such a control agent is pressing, be-

cause when it is found it will enable us to increase fish production in many ponds through fertilization where such practice is not now feasible.

### GAME RESTORATION

This Division's activities are concerned with providing the licensed hunter with covers open to public hunting and a game crop that may be harvested. Constant land use changes are now taking place in Connecticut and they are not always conducive to rearing a native game crop.

The Department's shooting ground program is outlined in the report of the Law Enforcement Division.

The purchase and over-all liberation plans for the release of pheasant, quail and raccoon are made by the division of game restoration. During the 1947 fiscal year, the following game was purchased by this Division:

### GAME DISTRIBUTION

Fiscal Year 1947-48

#### Pheasants

Fall, 1947	Cocks	Hens	Total
During season (Dept. regular)	18,003	10	18,013
Post season (Dept. regular)	164	2,574	2,738
Six-week program	5,226	3,733	8,959
Cooperative liberations (Dept.'s share)	125	81	206
Spring, 1948			
Six-week program (1947) held for spring liberation	176	1,299	1,475
Cooperative liberations (Dept.'s share)	29	123	152
Total	23,723	7,820	31,543

Quail Liberation—646

Cooperative Raccoon Liberation—130

The cost of purchasing these game species totalled \$93,733.80.

The quail liberations are not thought to have any great effect on increasing population for harvest by the hunter, but are made primarily as a means of perpetuating a dwindling species in a limited area of the state.

Additional activities of the Division include:

- (1) Food and cover planting on limited scale in refuge areas.
- (2) Mapping of towns where Department controlled hunting areas are operated.
- (3) Supervision of private shooting preserves.
- (4) Purchase and distribution of grain for the winter feeding of game birds.
- (5) Regulation of field trials.
- (6) Issuance of custodian permits for game animals; trapping permits on State lands and game breeders' licenses.
- (7) Investigation in cooperation with the University of Connecticut in determining improvement of waterfowl salt marshes correlated with adequate mosquito control.

As a result of studies made during the past winter, more emphasis in the future will be placed in the winter feeding program and cover plantings of evergreen as a means of carrying over pheasant breeding stock than the planting of grain patches in refuge areas.

A mapping project has been started which intends to correlate land use and wild life management. Each map, a township in extent, will be a basis for formulating recommendations for proper use of the wild life resources of the town. It is hoped that town planning commissioners, sportsmen's clubs, etc., will take advantage of the results of this project.

### PITTMAN-ROBERTSON PROGRAM

The allotment of Federal funds to carry out the work of this section for the fiscal year 1947-48 was \$41,318.86. This money is available to be obligated through the approval of the U. S. Fish and Wildlife Service of projects submitted by the department, at any time from July 1, 1947 to June 30, 1949. Funds so obligated do not revert to the Federal government until July 1, 1950. At the end of the fiscal year 1947-48 only \$5,156.74 remained unobligated with a year remaining in which to obligate this money.

Again this year the Congress appropriated the full amount of the income from the tax on sporting arms and ammunition for the purposes of the Pittman-Robertson Act. The increased participation in outdoor sports and increased prices will undoubtedly make larger amounts available. The Department's share, in projects to expend an estimated \$50,000 of Federal funds annually will be \$16,666.67, about 10 per cent of the expected income to the game fund.

With the obligations of the expanded program in mind the added work this year has been that necessary to formulate new projects in the fields of development work for game and the acquisition of necessary and suitable refuge areas.

Projects are now under way to outline the improvement work on forest land for grouse and other forest wild life and to carry out the work, with the cooperation of the Forestry Department, on plantation areas in the Naugatuck State Forest. The locating and evaluation of all state-owned lands that are posted as refuges furnishes the basic information for an expected acquisition program to provide the necessary state-wide refuge and public hunting area system. This survey also gives the information necessary to plan development projects for the refuges in order that they may add to the shootable supply of game in the state. A more extensive survey of the entire Connecticut River and its flood plain shows the needed improvements for wild life and the possibilities for public ownership in this important area of the state.

Money from the general fund should be provided to match Federal funds to the extent of one-quarter of the cost of the land acquisition program. Both because the resultant refuge and shooting-ground system will be valuable to all the people of the state and to make game fund money available for the activities of the division which cannot be carried on under the Pittman-Robertson program.

As in the past, the solution of the pressing problems of maintaining the game supply is a primary object of the program. A larger share in the

actual solution of these problems, through improving conditions for game throughout the state, is now financially possible.

## INCOME AND EXPENDITURES 1947-48

## Means of Financing

## Cash Balance at beginning of Fiscal Year

Game fund	\$37,964.75	
Inland fish fund	80,400.64	
Marine fish fund	<u>5,721.56</u>	\$124,086.95

## Less transfer from Inland Fish Fund to Fish and

Game General Fund for construction of fish pools at Kensington hatchery	8,500.00	\$115,586.95
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## Receipts from sale of angling and hunting licenses and other sources

Game fund	167,264.21	
Inland fish fund	<u>258,402.27</u>	\$425,666.48

## Appropriation from General fund

		\$161,877.60
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## Total cash resources

		\$703,131.03
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## Expenditures

Game fund	174,428.61	
Inland fish fund	269,174.06	
Marine fish fund	1,911.72	
General fund	<u>147,162.37</u>	\$592,676.76

## Balances on hand at end of fiscal year

Game fund	30,800.35	
Inland fish fund	61,128.85	
Marine fish fund	3,809.84	
General fund	<u>* 14,715.23</u>	

## Total balances June 30, 1948

		\$110,454.27
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\* Includes \$2,079.10—Statutory appropriation made exclusively for purchase of egg-bearing lobsters.

\$8,996.27 for capital expenditures held over for use in year 1948-49.

## PROPERTIES

The following properties are under the supervision of this Agency:

Name and Location	Valuation of Land, Buildings and Permanent Improvements
Trout Hatchery—Burlington	\$ 84,244.00
Trout Hatchery—Windsor Locks	20,519.00
Trout Rearing Station—Kensington	38,999.00
Pachaug Rearing Station	6,587.00
Lobster Hatchery—Noank	45,380.00
Shade Swamp Sanctuary	52,800.00
Assekonk Swamp Area—Stonington	5,550.00
Other land owned by Department	<u>62,121.00</u>
	\$316,200.00
Total Inventory including Personal Property, Equipment and Livestock	\$503,177.00

## EXPENDITURES FOR TEN YEAR PERIOD 1937-1947

Biennium	Expended
1937-1939	\$471,360.66
1939-1941	468,332.00
1941-1943	655,084.29
1943-1945	627,454.96
1945-1947	941,785.44

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REPORT OF THE  
Board of Fisheries and Game  
1948 - 1949

*Reprint from*

DIGEST OF CONNECTICUT ADMINISTRATIVE  
REPORTS TO THE GOVERNOR '48-'49

*Volume III*

*Published at*  
HARTFORD, CONNECTICUT  
1949

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## BOARD OF FISHERIES AND GAME



*Established*—1866

*Statutory authority*—General Statutes, 1949 Revision, Section 4846 to Section 5020

*Administrative head*—RUSSELL P. HUNTER, Superintendent

*Deputy administrator*—ROGER C. NORLING, Executive Assistant

*Central office*—State Office Building, 4th Floor; Telephone 7-6341; Ext. 2369

*Average number full-time employees*—85

*Funds for operation fiscal year 1948-1949*—  
Legislative appropriation, \$656,755.13

*Expenditures fiscal year 1948-1949*—  
Recurring operating expenditures, \$627,762.27  
Capital outlay, \$31,728.03

*Organization structure*—Bureaus: Administration, Game Restoration, Trout Restoration, Fisheries Management, Law Enforcement

Previous reports of the State Board of Fisheries and Game have stressed the need for some adequate vehicle for the wider dissemination of information on conservation management. Every year this need grows. The Department has the technical knowledge, it has the facilities and the enabling legislation, to do a better job of fishery management than is being done. The fishery problems in this state are much simpler, and much nearer to solution, than are the associated human problems. Lack of public understanding of the nature of modern management methods seems to inhibit the Department from putting such methods into practice. It is the lack of public understanding which generates pressure on the Department to emphasize stocking on the put-and-take basis; and this often is done, in violation of the known biological facts concerning the species being stocked. Stocking is only one tool of fisheries management. Others, vitally important to the widest measure of success, are weed control, fertilization, removal of unwanted species, rebalancing of mixed populations to get better production of game fishes, and habitat improvements. When the public can be brought to understand and accept these ideas the State Department of Fisheries and Game will be able to provide more fishing for every dollar expended to that end.

The past year (July 1, 1948 to June 30, 1949) has been interesting, there have been numerous outstanding accomplishments in most phases of the Board's work and these are explained in some detail in this report. Intensive work on many projects lies ahead—in fact already is well under way.

### BOARD MEMBERSHIP

The Board is made up of three members appointed by the Governor for six-year terms. The present Chairman is John P. Montgomery of Mt. Carmel who is filling the unexpired term of F. L. Sheane until 1951. P. C. Barney of Farmington serves until 1949, and Dr. John E. Flaherty of Rockville completes a second term of appointment in 1953. The Superintendent appointed by the Board is R. P. Hunter.

### DIVISIONS

The divisions of the Department and their administrative heads are:

Administration—Roger C. Norling  
 Wildlife Protection and Law Enforcement—Thomas E. Rose  
 Fish Restoration—F. N. Banning  
 Fisheries Management—Lyle M. Thorpe  
 Game Restoration—Arroll L. Lamson

### ADVISORY COUNCIL

The Advisory Council is a group of sportsmen which serves as a liaison between the sportsmen and the Department. The Council was first organized in 1932 and has served continuously since that time. It meets monthly with the Department at the Hartford office or at some State-owned property. Two members from each county serve four-year terms after election to membership by the Council. The present membership is:

*Tolland County:* Kenneth Little, Rockville, President; George P. Hall, Woodstock Valley.

*Litchfield County:* Henry J. Heiftje, Torrington; E. A. Ambler, New Milford.

*Windham County:* Raymond Chamberlain, North Windham; Leon A. Robbins, Thompson.

*New Haven County:* Dr. J. F. Quinn, New Haven; George Heinold, Madison.

*Hartford County:* Richard D. Pitney, East Glastonbury; Philip E. Devnew, Granby.

*New London County:* Leonard Partridge, Norwich; Dr. Willard J. Morse, New London.

*Middlesex County:* Harold Burnham, Middlefield; Albert Santi, Ivoryton.

*Fairfield County:* Howard Wilson, Norwalk; Frederick A. Carley, Danbury.

Members At Large are Arthur Bissell, Suffield; George Jones, Norwalk; and George Ganem, Torrington.

## WILDLIFE PROTECTION AND LAW ENFORCEMENT

There have been no personnel changes in the permanent, full-time staff or in the number of part-time patrolmen of the Division of Wildlife Protection and Law Enforcement during the fiscal year. Permanent, full-time members of this Division are one chief warden, eight State wardens, and twenty-six deputy wardens.

This division is charged with the responsibility of protecting all wildlife and enforcing the laws and regulations relating to fish, game and crustacea. During the year, however, the wardens carried on the usual non-law enforcement functions which are also a part of their duties. Man hours spent on all activities by thirty-four men (eight State wardens and twenty-six deputies) are shown in the following tabulation:

Liberating Birds .....	4,470
Building Feed Stations .....	450
Feeding Birds .....	1,910
Trapping Birds or Quadrupeds .....	230
Food Patch Work .....	40
Planting Fish .....	4,055
Stream or Pond Work .....	730
Field Trials .....	1,120
Surveys .....	415
Leases .....	480
Posting .....	840
Investigations, Law Enforcement, Care of Equipment, Special Assignments, Office Work, Misc. ....	77,330
Total .....	92,070

The regulated hunting area plan sponsored by this Department provides a means of opening privately controlled land to public hunting. Increased hunting interest has resulted in expansion of these areas in cooperation with fish and game clubs and landowner groups. These additional areas will be supervised and managed without adding to enforcement personnel.

The trout liberation program for 1949 engaged the warden service for a considerable portion of its working time during the months of April, May and June. During the early Spring, stream fishing was exceptionally good. The long drought and high water temperatures of Spring and Summer produced very unfavorable conditions in many streams that normally support trout in good condition. This required a careful, continuous check of stream conditions and resulted in changes in the trout liberation program. The wardens must be alert to these unusual conditions.

During the year one non-fatal case of tularemia was reported in the town of Groton. In an effort to determine the extent of the disease a warden was assigned to trap rabbits within a one-mile radius of the home of the victim. All captured rabbits were immediately transported to the Animal Disease Laboratory, University of Connecticut, for pathological study. No further evidence of tularemia was found. It is rare that a report of tularemia transmitted to humans is made in this state. The Board policy which prohibits importation of wild game rabbits for liberation is an effort to suppress this disease in Connecticut.

In January the warden service conducted three waterfowl surveys at the request of the U. S. Fish and Wildlife Service. The principal survey was the annual census of waterfowl. Another related to waterfowl post-season kill, and the third was a duck stamp survey.

In September the warden service and the fish division constructed the department exhibit at the Eastern States Exposition at Springfield. Thayer Chase of the Park and Forest Department designed the exhibit. Technical assistance on the construction of the marine tank was given by Dr. C. W. Coates and the staff of the N. Y. Zoological Society. The exhibit was unique for this region in that it contained a salt water aquarium with several species of aquatic life native to Connecticut marine waters. In addition there were pens in which game birds and quadrupeds native to the state were on display. Uniformed wardens were in constant attendance during the week of the exhibit. The exhibit received favorable comments and will be repeated in 1949.

During the fiscal year all regulations of the Department were carefully reviewed by the Attorney General's Office. Those not conforming to statutes were repealed or put in acceptable legal form. All regulations in force at this time have been recorded in the Office of the Secretary of State, approved by the Attorney General, and published in the Connecticut Law Journal.

During the fiscal year a total of 893 warnings were issued as compared with 1125 for the previous year. There were 279 arrests with 264 convictions; or 95 per cent convicted. In the previous year there were 234 arrests. In addition 79 arrests were made by State Police and other enforcement officers.

#### DIVISION OF FISH RESTORATION

The Division of Fish Restoration supervises the artificial rearing and distribution of trout and lobsters from State hatcheries and rearing stations; also the purchase and distribution of trout and pond fishes in public waters and the maintenance of hatcheries, rearing stations, houses and equipment.

During the calendar year 1948 a total of 957,811 trout weighing 49,668 pounds were raised in state hatcheries and rearing stations and distributed in public waters. From commercial dealers there were purchased 207,535 legal trout weighing 72,195 pounds. These trout were also distributed in public waters. Nine hundred and five legal trout weighing 125 pounds, raised in cooperation with the Simsbury Fish and Game Club, were distributed.

Fifty-seven thousand one hundred and seventy-five warm water fishes purchased from commercial fishermen were distributed in ponds reserved for children under sixteen years of age.

Four million five hundred thousand pike perch fry hatched from eggs procured from the U. S. Fish and Wildlife Service were distributed in Candlewood Lake.

One hundred thousand smallmouth bass fry collected in cooperation with the U. S. Fish and Wildlife Service were distributed in several lakes and ponds.

Fourth-stage lobsters reared and released in Connecticut waters totaled 154,264. The adults released after eggs matured numbered 1,103.

At the Beaver Brook rearing station in Franklin a rearing raceway approximately 400 feet long has been completed and trout introduced. More raceways will be completed as the water supply is increased.

Six concrete pools have been completed at the Kensington Rearing Station. These pools replace those formerly sheathed with plank. This construction, plus pipe line to one of the larger ponds, completes rebuilding plans at this station for the present. Plans have been completed for construction of a twenty-ton freezer and replacement of waste pipe lines at the Burlington Hatchery. Part of the waste line will be installed in 1949, the balance replaced in the spring of 1950-51.

Connecticut's commercial fishing industry is an important asset to the state. Value of fishing fleet and gear, \$1,500,000; value of catch for 1948, \$3,500,000.

### LABORATORY MARINE INVESTIGATIONS

During the past year the Connecticut State Board of Fisheries and Game continued to cooperate with the Bingham Oceanographic Laboratory, Yale University, in the study of the commercial trawl fishery of the Block Island Sound region. The chief port of landing for this fishery is Stonington, Connecticut, and the major elements in the catch from this area are butterfish, scup, cod, hake, fluke or summer flounder, yellowtail or dab, and winter flounder—the latter being the dominant fish in the catch and the chief object of the relatively small draggers which work this area. Over the past thirty years the landings of winter flounder from the Block Island Sound region have totalled from 2 to 6 million pounds annually.

Since 1943 the Bingham Oceanographic Laboratory has carried on an intensive survey of this region with the object of establishing fundamental principles in the science of fishery biology, and thus being able to contribute to a better understanding of the wisest possible utilization of these resources. The life histories of the more important fish are now beginning to be known in some detail, and there has also been accumulated a vast amount of material on the bottom invertebraes of the area and the feeding habits of the bottom fishes. Studies are also being made on the plankton (floating microscopic animals) in these waters, with the result that a very considerable body of knowledge on the biological productivity of the area is now at hand. These long-term studies also include observations on the seasonal and annual fluctuations of abundance of the different fish, as well as analyses of the competition between the various species. For example, there is much evidence to indicate that the winter flounder and certain species of skates are in direct competition for the same kind of food and perhaps even space on the bottom; this leads to the conjecture that if the skates were removed instead of being returned to the water as "trash," the catch of the winter flounder might be increased.

Fundamental long-term biological studies such as these are the only basis for a complete and intelligent understanding of marine resources and their potentialities.

### FISHERIES MANAGEMENT

Since 1938 the Board has been engaged in a systematic survey of the impounded waters of the state. The survey crew worked in the Windham Area (Warden District No. VI) during the Summer of 1948 and a similar crew studied the lakes and ponds of the New London Area (Warden Dis-

trict No. VII) in the Summer of 1949. These studies have been the basis for improved management of some of the more important lakes of the state. A considerable amount of information resulting from the survey work has not been put to practical use as yet but is available as a guide should the Department decide to concentrate more resources on a warm-water fish program.

Experimental work on fertilization of small ponds has been continued in a modest way. In one heavily fertilized pond we have been able to eliminate rooted plants and at the same time make the pond support a heavy population of fast-growing fish.

Connecticut has many shallow lakes and ponds which, in recent years, have become filled with rooted aquatic plants. It appears that the game fish production has been greatly diminished by these weeds and that these waters will never again provide good fishing until the weeds are controlled. The problem is big and complex and at the present time we know of no really good solution. Most of the chemicals which will kill these weeds are either very expensive, dangerous to humans and livestock, or dangerous to the fish or their food supply. Some experimental work with a power cutter has been done and with encouraging results. Likewise, the plant hormone types of control agents show promise on the emergent and floating-leaved plants.

There seems to be an ever-increasing desire on the part of lake shore property owners to treat their lakes with copper sulphate. Sometimes the nuisance which they desire to correct is algae; in other cases it is rooted vegetation. Copper sulphate is not well-adapted to the control of rooted plants. Such heavy concentrations are required to do the job that nearly all aquatic life is killed. It is true that light concentrations of copper sulphate will kill algae and not kill many fish. However, the algae and the minute animals associated with it constitute the basic food supply of the fish. Therefore, it appears that the effect of copper sulphate treatments is to lower the ability of a lake to produce fish. More detailed explanations of the effect of copper sulphate treatments on fishing waters have been published by the Department in previous reports. However, due to the increased interest in such treatments it seems timely to point out again that a body of water cannot be expected to produce its maximum possible crop of fish if fish food organisms are destroyed by poison.

There is a widespread belief that large numbers of fish migrate over dams and thus are lost to the lakes in which they belong. In some cases rainbow trout do exhibit this tendency to migrate downstream to a marked degree. For some time we have been urged to install a screen in the outlet of the Twin Lakes in Salisbury to prevent downstream loss of rainbow trout. The presence of numbers of sizeable trout in the outlet stream was advanced as proof that rainbows were leaving the lake in considerable numbers. A workable screen at this location would cost several thousand dollars, so the Department decided to check the extent of downstream migration before making the investment. Early in the spring of 1949 a fish trap was built in the outlet of the Twin Lakes system and maintained there during the period when trout would be expected to move downstream. The trap caught one rainbow trout, one black bass and one muskrat. It appears that the rainbows present in the outlet stream do not come from the lake and that a screen at this location is not needed.

## GAME RESTORATION

The Game Restoration Division is concerned with providing the licensed hunter with covers open to public hunting and a game crop that may be harvested.

During the fiscal year, two new permit-required regulated shooting areas have been added to the regulated hunting program. These new areas bring the total of regulated shooting acreage to 218,453 and with the twenty-two State Forests open to public hunting, provide a total of 321,681 acres open to hunting as listed in the annually published hunting pamphlet.

One phase of the Division's work during the year included active participation in cooperative programs with fifty-six different sportsmen's organizations. This participation included (a) the operation of thirty-one fish and game club sponsored permit-required regulated shooting areas; (b) the cooperative rearing of 11,225 six-weeks-old pheasants which were provided to thirty-two clubs; (c) the planting of trees, shrubs, and grain by eight clubs; (d) the release of raccoon by seven clubs; and (e) the development and operation of field trials and field trial areas by nine clubs. These cooperative programs have been in operation for a number of years and there is every indication that the interest by sportsmen's clubs will continue.

## GAME DISTRIBUTION

Fiscal Year—1948-1949

	Cocks	Hens	Total
Pheasants			
Fall, 1948			
During Season (Dept. Regular)	18,251	—	18,251
Post Season (Dept. Regular)	394	2,760	3,154
Six-Week Program	4,589	3,786	8,375
Cooperative liberations (Dept's share)	307	59	366
Spring, 1949			
Regular Spring (Dept.)	869	4,557	5,426
Six-Week Program	114	673	787
Cooperative liberations (Dept's share)	51	121	172
	24,575	11,956	36,531
Quail, liberation—300 birds			
Cooperative Raccoon Liberation—84 raccoon			
Cooperative Rabbit Liberation—14 rabbits			

In the purchase of pheasants for liberation during the 1948 hunting season alone, contracts were awarded and periodic farm inspections made of thirty-four Connecticut pheasant breeders and eight breeders from outside the state.

The mapping of towns where Department controlled hunting areas are operated, is being continued. Another Summer's work should complete this phase of the management project.

Investigation in cooperation with the University of Connecticut of salt marsh waterfowl improvement has stopped for the time being due to the lack of wildlife graduate students and the changing of personnel in the Forestry and Wildlife Department at the University.

In the planning and early development of a beagle trial area on the Salmon River State Forest, it is anticipated a two-fold return will result,

that of a State-owned beagle trial area and a field demonstration of rabbit cover management.

The 1949 Legislature provided a specific law relating to the operation of private shooting preserves. It is not expected that this law will cause any great increase in the number of licensed preserves, however, it does provide greater protection to the commercial operators of their land and operating equipment.

### PRIVATE SHOOTING PRESERVES

During the 1948-1949 season there were nineteen regulated private shooting preserves, comprising 11,044 acres, operating under permit from the Board. Five preserves operated during the regular open season and fourteen preserves operated during an extended season. There was a total of 11,877 pheasants and 368 quail liberated on these preserves and a total of 6,171 pheasants and 162 quail shot on the preserves.

With the passage of a new law during the 1949 Legislature pertaining to the regulations governing shooting field trials, it is anticipated that one or more State-owned retriever trial areas will be requested and developed on State-owned lands.

By banding all of the pheasants liberated during the 1949 season and continuing the study of the Warden Service check of the hunter's bag and the hunting permits returned, the Division plans to watch the effect of the legalized shooting of hens on the overall hunter kill of this species.

Waterfowl studies elsewhere in northeastern United States and Canada are showing that no large-scale black duck breeding ground development work is feasible. Connecticut's Pittman-Robertson's program calls for considerable waterfowl development work on State-owned lands. A great deal of worthwhile black duck nesting ground work can be accomplished by sportsmen's clubs in their own areas by repairing old dams and raising the water level with low earthen dikes in marshes and wooded swamps.

One of the objectives of the division of game management is to accomplish the improvement of game cover on private lands. This is hard to attain on account of changes in ownership and in land use. Demonstration projects, however, are feasible and may help to accomplish the purpose of improving private lands for game.

During the season of 1949 the number of requests for the inspection of crop lands to be sprayed from the air for insect control has greatly increased. About 7500 acres of tobacco lands have been inspected requiring 30 man days of work. The sprays now being used were tested by this Department to determine their effect on rabbits, pheasants, pigeons, trout and warm water fish. The information gained will enable the Department to service these requests much more rapidly in the next season.

### WHITE MEMORIAL FOUNDATION

Research work on the Litchfield-Morris Sanctuary for the past year has been somewhat handicapped by the loss of the resident wildlife technician, William Frank, and the necessary readjustment when assigning a new technician to the area.

The grouse census, which has been made monthly since 1940, was carried on without interruption during this transition period. The valuable data gathered on this census will be used as a basis for an intensive development program which is currently being outlined.

The initial work has been completed on two food patch areas that are designed for the dual purpose of goose pasture in conjunction with brood cover and food for grouse. Other plantings are planned for similar development.

The rapidly increasing importance of waterfowl has brought this phase of wildlife sharply into focus during the past year and an intensive banding program has been put in operation. The Sanctuary has ideal conditions for such a study and a number of ducks were banded during November and December of 1948. The suitability of this Sanctuary as a duck breeding area appears to be of much greater importance than was previously assumed.

The Sanctuary has been used by several groups for study purposes under the guidance of the resident wildlife technician. The influence this educational work may have on future sportsmen and wildlife research personnel may easily be the most important accomplishment of the year.

## DEER

The white-tailed deer is found throughout the state. Ten years (1939-1948) of deer kill reports received by the Board of Fisheries and Game show that only eight of the one hundred sixty-nine towns reported no deer kill during the period.

Deer populations were heaviest in three sections of the state as indicated by these reports. Greatest concentrations were located in the northwest area of the state, centering around the town of Warren. A somewhat smaller concentration was apparent in the northeast region near the town of Ashford. A third and decidedly smaller population was evident in the southern central region near Guilford.

The total reported deer kill for 1946 of 599 continued the general rise in kill started after the 1943 drop. The 1947 and 1948 kills of 621 and 721, respectively, were above the ten-year average of 607. The heavy snows of the 1948 winter resulted in a reported deer kill by dogs of 124, the highest on record for Connecticut.

Deer hunting permits have shown a steady increase; 3,440 permits were issued in 1946; 3,796 in 1947, and 4,078 in 1948. This increase has resulted in a decrease in the reported take per hunter. In 1947, a 10.35% increase in permits resulted in a 12.21% decrease in the number of deer per 1,000 hunters. In 1948 an increase of 7.45% in hunters over 1947 resulted in a decreased kill of 9.56%. The 1948, 18.55% increase in permits over the 1946 figures shows a resulting decrease of 20.61% in deer taken per thousand permits issued.

## PITTMAN-ROBERTSON PROGRAM

The Pittman-Robertson Section of the Game Division carries on projects approved by the Board and the U. S. Fish & Wildlife Service. The

State is reimbursed for three-quarters of the cost of such work up to the amount available by federal allocation. \$53,903.10 in federal funds was available for the fiscal year 1948-1949. Of this amount \$27,956.25 was obligated for approved projects, the balance remaining available for obligation in the 1949-1950 fiscal year.

All three of the general classes of activities approvable under the Pittman-Robertson program were carried on. Investigations of the wild-life populations of the state, specific studies of the results of pheasant stocking, and a survey of existing refuge areas were one field of activity. A bulletin on the Seed Stock Refuge Investigation at Wallingford was published. Development work to improve conditions for forest game, particularly ruffed grouse, was carried out, with the cooperation of the Forestry Department, on a part of the plantation areas in the Naugatuck State Forest. This work has improved the condition of the plantations for both timber production and game, and is being continued. Acquisition of a marsh area on the head waters of the Skungamaug River in Tolland was completed during the year. This 240 acre area is the first of a series of producing areas which should add to the waterfowl and fur bearer crop produced annually in the State.

Since no appropriation was made from the general funds of the State for the purchase of land during the biennium this phase of P-R activities will be curtailed. A considerable amount of unobligated federal funds probably should be available at the beginning of the next biennium in contemplation of the necessary land acquisition program at that time.

Investigations will continue as a basis for development work to improve conditions for game, to minimize damage to game and game habitat from farming and forestry practices, and effectuate the work of the Department.

Development work to improve conditions for game will be continued and expanded on State-owned lands.

Opening the forest plantations, work on the Charter Marsh area, and additional small impoundments benefiting waterfowl, raccoon, and aquatic furbearers are needed. Present plans call for intensive work on all three this year.

## DEPARTMENT INCOME AND EXPENDITURES

Fiscal Year 1948-1949

### Means of Financing

Cash balance beginning of fiscal year:

Game Fund	\$ 30,800.35	
Inland Fish Fund	61,128.85	
Marine Fish Fund	3,809.84	\$ 95,739.04

Receipts from sale of hunting and angling licenses and other sources:

Game Fund	\$190,780.43	
Inland Fish Fund	278,743.87	\$469,524.30

Appropriation from General Fund \$160,122.91

Total Cash Resources \$725,386.25

## Expenditures :

Game Fund	\$193,578.65	
Inland Fish Fund	281,656.13	
Marine Fish Fund	256.50	
General Fund	154,319.53	\$629,810.81

## Balances on hand at end of fiscal year :

Game Fund	\$ 28,002.13	
Inland Fish Fund	58,216.59	
Marine Fish Fund	3,553.34	
General Fund	5,803.38	\$ 95,575.44

## PROPERTIES

The following properties are under the supervision of this agency :

Name and Location	Valuation of Land, Buildings and Permanent Improvements	
Trout Hatchery—Burlington	\$ 84,625.00	
Trout Hatchery—Windsor Locks	24,368.00	
Trout Rearing Station—Franklin	9,500.00	
Trout Rearing Station—Kensington	43,763.00	
Trout Rearing Station—Voluntown	6,600.00	
Lobster Hatchery—Noank	43,800.00	
Shade Swamp Sanctuary—Farmington	33,532.00	
Assekonk Swamp Area—Stonington	4,400.00	
Other land owned by Department	85,197.00	
	<u>\$335,785.00</u>	
Total Inventory Including Personal Property, Equipment and Livestock		\$515,121.00

## BOARD POWERS AND DUTIES

In 1866 the Legislature created a Fish Commission of two members for the purpose of protection of sea fish in the Connecticut River, the introduction and protection of fish generally in state waters and to cooperate with other states on the subject of restoration of sea fish. In 1869 the Legislature provided for the appointment of three Commissioners to hold office for one year. In 1870 this law was amended to provide that one Commissioner would serve for a period of two years, one for a period of three years, and one for a period of four years. From 1866 to 1895 Connecticut had only a Fish Commission. In 1895 the Commission on Fisheries and Game was established and the Legislature provided for the appointment of three Commissioners for a term of two years each. In 1913 the law was amended to provide for the appointment of eight Commissioners, one from each county, and this was in effect until 1921 at which time the law was again amended to provide for three Commissioners.

This law is still in effect (Section 4847). Commissioners are appointed by the Governor, one each biennium for six-year overlapping terms. They elect their own Chairman. The Commissioners serve without compensation. They appoint a Superintendent who is the executive head of the department (Section 4847).

One member of the Commission is a member of the Atlantic States Marine Fisheries Commission (Section 3559). The members of the State

Board of Fisheries and Game and the State Park and Forest Commission constitute the Commission on Forests and Wildlife (Section 3468). The Superintendent is ex officio a member of the State Soil Conservation Advisory Committee (Section 3061) and the Board of Mosquito Control (Section 3858). The Highway Commissioner and the Superintendent of the State Board of Fisheries and Game are directed to prepare and file with the Office of the Secretary of State an official list of names of brooks, rivers, ponds and other waters of the state, and to certify additions and corrections (Section 181).

The State Board of Fisheries and Game enforces all laws and regulations relating to fish (exclusive of shell fish), game and crustacea (Section 4848); operates fish and lobster hatcheries, purchases for distribution fish, game and crustacea, acquires lands and waters by gift, lease, purchase or agreement for the purpose of fishing, hunting, trapping or shooting rights (Sections 4855, 4848, 5020); establishes fish and game refuges (Section 4922); engages in wildlife restoration projects in cooperation with the United States Fish and Wildlife Service (Section 4925); cooperates with the United States Fish and Wildlife Service and the fish and game commissions of other states (Section 4848); controls the transportation, exportation, importation, sale or exchange of all fish and wildlife and wild bird plumage (Sections 4864, 4892, 4861, 4891); issues licenses authorizing hunting, trapping and angling (Section 4868), purchase of furs (Section 4880), breeding of wildlife (Section 4879), breeding of fur bearers (Section 482a), practice of taxidermy (Section 4672), licenses for scientific purposes (Section 4920), licenses for operating commercial fish hatcheries (Section 4962), licenses for commercial marine fishing boats and vessels (Section 4963), inland commercial fishing licenses (Sections 4952, 4953, 4957, 4959), and marine commercial fishing licenses (Sections 4969, 4970), and issues permits for the taking of deer (Sections 487a, 488a, 489a), permits for the establishment of private shooting preserves (Section 483a), permits authorizing field dog trials (Section 477a), and may restore license privileges after conviction of violation of fish and game laws (Section 4883).

The Board promulgates hunting, trapping and fishing regulations on lands owned or controlled by the State (Section 4855) and may extend or curtail hunting, trapping and fishing seasons, bag limits and methods of taking (Section 4850); annual exhibits may be held to make known the fish and game of the state (Section 4853).

The Board is empowered to appoint fish and game wardens for the enforcement of the laws and regulations (Section 4865), the powers and duties of wardens being defined in Section 4866. The Board is directed to enforce laws concerning lobsters and marine fishes (Section 4862); to prevent hunting on Sunday (Section 4887); to abate hunting and possession of firearms by aliens (Section 4888); to protect all birds other than game birds (Sections 4916, 4917); to protect from theft and molestation fish, lobsters, pounds, weirs, nets and other devices used for the purpose of taking and retaining fish and lobsters (Section 4980); to prevent obstruction of streams (Section 5001); and enforces the law relating to exposure of poison (Section 8459); may issue permits for the use of copper sulphate (Section 4938); may designate certain areas of water in or near the mouth or entrance of any stream or estuary within which area no person

shall use any purse net, beam or otter trawl (Section 4966) ; and may establish zones to distinguish inland waters from the marine district allowing commercial fishing in either district without additional fee (Section 4974) ; defines outer harbor boundary lines for the purpose of controlling the taking of certain waterfowl (Section 486a) ; may use chemical, electrical or mechanical means for control of aquatic plants and animals (Section 479a) ; may designate areas where aerial crop dusting with chemicals or insecticides may not take place (Section 4835) ; may suspend hunting licenses of persons causing injury, death or property damage while hunting (Section 484a).





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REPORT OF THE  
**Board of Fisheries  
and Game**  
1949 - 1950

*Reprint from*

DIGEST OF CONNECTICUT ADMINISTRATIVE  
REPORTS TO THE GOVERNOR '49-'50

*Volume IV*

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1950



# BOARD OF FISHERIES AND GAME



*Established*—1866

*Statutory authority*—General Statutes, 1949 Revision, Section 4846 to Section 5020

*Administrative head*—RUSSELL P. HUNTER, Superintendent

*Deputy administrator*—ROGER C. NORLING, Executive Assistant

*Central office*—State Office Building, 4th Floor; Telephone 7-6341; Ext. 2369

*Average number of full-time employees*—85

*Funds for operation fiscal year 1949-1950*—  
Legislative appropriation, \$726,275

*Expenditures fiscal year 1949-1950*—  
Recurring operating expenditures, \$594,560.86.  
Capital outlay, \$21,499.59

*Organization structure*—Bureaus: Administration, Game Restoration, Trout Restoration, Fisheries Management, Law Enforcement

## BOARD MEMBERSHIP

The Board is made up of three members appointed by the Governor for six-year terms. The present Chairman is John P. Montgomery of Mt. Carmel who is filling the unexpired term of F. L. Sheane until 1951. Richard T. Cooke of Torrington serves until 1955, and Dr. John E. Flaherty of Rockville completes a second term of appointment in 1953. The Superintendent appointed by the Board is R. P. Hunter.

## DIVISIONS

The divisions of the Department and their administrative heads are:  
Administration—Roger C. Norling.  
Wildlife Protection and Law Enforcement—Thomas E. Rose.  
Fish Restoration—F. N. Banning.  
Fisheries Management—Lyle M. Thorpe.  
Game Restoration—Arroll L. Lamson.

## ADVISORY COUNCIL

The Advisory Council is a group of sportsmen which serves as a liaison between the sportsmen and the Department. The Council was first organized in 1932 and has served continuously since that time. It meets monthly with the Department at the Hartford office or at some State-owned property. Two members from each county serve four-year terms after election to membership by the Council. Three members-at-large serve three-year terms. The present membership is:

*Hartford County:* Richard D. Pitney, South Glastonbury; Philip E. Devnew, Granby.

*Litchfield County:* E. A. Ambler, New Milford; Henry J. Heiftje, Torrington.

*Middlesex County:* William F. Petras, Middletown; William Van Vleck, Old Saybrook.

*Fairfield County:* John Kuliesh, Danbury; Howard Wilson, Norwalk.

*Tolland County:* George P. Hall, Woodstock Valley; Leo Flaherty, Rockville.

*New Haven County:* George Heinold, Madison; Dr. J. F. Quinn, New Haven.

*New London County:* Dr. Willard J. Morse, New London; Leonard Partridge, Norwich.

*Windham County:* Raymond D. Chamberlain, North Windham; Henry Danielson, Putnam.

Members At Large are George Jones, Norwalk; Kenneth Little, Rockville; and Arthur Bissell, Suffield.

## DIVISION OF ADMINISTRATION

During the calendar year 1949 the Division of Administration issued 7,429 licenses and permits, including commercial fishing licenses, permits to kill deer, and numerous other licenses. In addition, 103,742 stubs of hunting and angling licenses issued by town clerks were checked with reports submitted by them to see that all licenses were accounted for and all payments made to the State Treasurer.

Approximately 1,300 leases for public hunting and fishing areas are filed and a record of renewal date of each is maintained.

All purchase orders are issued by this office.

Invoices and payrolls are audited and processed for payment. The keeping of books and preparation of financial reports is also a function of the Division of Administration.

This division is also responsible for issuing allotments of hunting and angling licenses and metal license holders to town clerks; also the distribution of hunting regulations, fishing regulations, and fish and game laws to town clerks, sportsmen, and to Fish and Game Departments of other states and territories.

All incoming and outgoing mail is handled by the division, and correspondence files are maintained.

It is the function of this division to prepare budgets for the approval of the Board and to maintain a system of budgetary control.

The cost of operating the Division of Administration during the fiscal year 1949-1950 amounted to only six percent of the entire amount required to operate the department.

## DEPARTMENT INCOME AND EXPENDITURES

Fiscal Year 1949-1950

Means of Financing		
Cash balance beginning of fiscal year :		
Game Fund	\$ 28,002.13	
Inland Fish Fund	58,216.59	
Marine Fish Fund	3,553.34	\$ 89,772.06
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Receipts from sale of hunting and angling licenses and other sources :		
Game Fund	\$196,721.94	
Inland Fish Fund	250,481.49	\$447,203.43
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Appropriations from General Fund		
Appropriation for Fiscal Year 1949-50	\$154,622.00	
Appropriation for capital projects and equipment— Biennium 1949-51	93,144.86	
	\$247,766.86	
Less restricted appropriations	\$ 16,740.00	\$231,026.86
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Total Cash Resources		\$768,022.35
Expenditures :		
Game Fund	\$195,017.95	
Inland Fish Fund	253,417.04	
Marine Fish Fund		
General Fund	167,625.46	\$616,060.45
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Balances on hand at end of fiscal year :		
Game Fund	\$ 29,706.12	
Inland Fish Fund	55,281.04	
Marine Fish Fund	3,553.34	
General Fund	63,401.40*	\$151,941.80
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\* \$62,484.02 of General Fund balance representing remaining appropriations for capital projects is available for expenditure during fiscal year 1950-1951. \$917.38 of 1949-1950 appropriation reverted to State General Fund.

## INCOME DURING TEN-YEAR PERIOD

July 1, 1940—June 30, 1950

	Inland Fish Fund	Game Fund
1940-41	\$116,645.43	\$ 97,228.51
1941-42	135,708.33	119,914.87
1942-43	134,022.15	122,165.20
1943-44	134,294.74	105,131.26
1944-45	147,346.81	107,526.27
1945-46	203,886.12	123,925.99
1946-47	223,071.17	160,497.17
1947-48	258,402.27	167,264.21
1948-49	278,743.87	190,780.43
1949-50	250,481.49	196,721.94

DIVISION OF WILDLIFE PROTECTION AND  
LAW ENFORCEMENT

During the fiscal year there have been no changes in the authorized positions of this Division. On November 23, 1949, Deputy Warden Albert G. Csech of Farmington died. He had been employed by the Department for eighteen years. The vacancy had not been filled by the end of the fiscal year. The authorized permanent, full-time positions in this Division are one Chief Warden, eight State Wardens and twenty-six Deputy Wardens. These men are primarily law enforcement officers. Under the statutes they are responsible for protecting all wildlife in the state, native and migratory, including both game and non-game wild animals. The nature of their duties requires that they be on call twenty-four hours a day.

As reported in the annual and biennial reports of this Department for many years the personnel of this Division has been required to work long and arduous hours with very little time off. During this fiscal year the Department was directed by the State Personnel Director to establish a five-day, forty-hour work week for all field personnel. For a period of seven months a sincere effort was made to effect such a work schedule. Records indicate such a schedule is not practical, and at the close of the fiscal year the State Personnel Director was requested to establish a five-day work week with no limitation on hours for the personnel of this Division.

During the period of this report the wardens carried on various activities that are not directly related to law enforcement. These general activities have been published in previous reports and need not be repeated in full here.

During 1948 five persons were fatally shot in hunting accidents, one hunter died from a broken neck when he fell out of a tree while raccoon hunting, five people were drowned in fishing accidents, and one fisherman was killed when struck by lightning. In 1948 hunting accidents brought injuries to ten persons.

In 1949 the accident record was considerably improved over the previous year. There was only one fatal hunting accident. This involved a seven-year-old boy who shot himself. One hunter died of a heart attack while hunting deer. Five persons were drowned. Only four persons were injured in hunting accidents by firearms. In consideration of the number of hunters afield in this highly congested state, the 1949 hunting accident record is an outstanding one.

During the year, wardens investigated the killing of two hundred and four deer. Ninety-two of these were struck by automobiles; one by train, sixty-six illegally shot; twenty-one killed by dogs; two drowned; one died of starvation; six were found injured and fifteen died from unassigned causes.

*Eastern States Exposition:* The exhibit of this Department at the Eastern States Exposition, West Springfield, Massachusetts, was constructed by the Warden Service and personnel from the Lobster Hatchery, Noank. The exhibit attracted much favorable interest. Wardens were in continuous attendance during the full week of the exposition.

*Waterfowl Survey:* In January, 1950, the Warden Service, cooperating with the Game Division and the U. S. Fish and Wildlife Service, conducted a state-wide waterfowl survey.

*Regulated Hunting:* Most of the permit-required regulated hunting areas have been in operation for many years under a cooperative agreement form now obsolete due to changes in the law. For several months, when time has permitted, the wardens have made landowner contacts and executed new agreements under proper statutory authority. Every effort will be made to complete this assignment before the opening of the 1950 hunting season.

*Game Bird Feeding:* The usual number of game bird feeding stations were established during the early part of the winter. Intensive feeding was not necessary due to the open weather. All stations were visited at regular intervals for the purpose of feeding, observation of depredation and game bird population. Reports indicate that a substantial number of pheasants survived the winter in good condition.

*Arrests and Warnings:* During the fiscal year the wardens of this Department made two hundred and twenty-six arrests. Of this number two hundred and ten, or 93 percent, were convicted and paid fines totaling \$4,039.30. All money collected by the courts in the form of fines and forfeited bonds goes into the treasury of the town where the prosecution takes place. In addition to the arrests, the wardens issued a total of 911 official warnings, which indicates a continuing educational effort with beginners in the field of hunting and fishing and those who unintentionally violate the laws and regulations.

The outstanding type of violation during this period was hunting and fishing without a license. Of the total arrests numbering 226 there were fifty-six prosecutions for hunting without a license; forty-four for angling without a license; and four for loaning licenses, or a total of 104. This type of violation for this period represents 46 percent of the total arrests. This is an unusual situation as this type of violation has not predominated since the depression years of the 1930's. This is a serious trend that will be met by the enforcement staff.

#### DIVISION OF FISHERIES MANAGEMENT

This division has continued investigations of pond fertilization and can report progress in this field. Most of the successful work of this nature has been done in the middle and south Atlantic states. Ponds in New England seem to require a somewhat different technique. We can make small ponds which are suitable for fertilization produce a large crop of fish but the cost here, as elsewhere, is high. Apparently, more efficient pond fertilization must await basic research on the nutritional requirements of algae.

A closely related problem is the control of excessive algal blooms which make some lakes unattractive for swimming for a short time each summer. Some relief from this nuisance can be had by treating the water with dilute copper sulphate. However, such treatments lower the ability of the lake to produce fish. It seems likely that more knowledge of the factors which cause excessive algal blooms might point out control measures which were not harmful to fish production.

Many of the State's shallow lakes and ponds are gradually being taken over by rooted aquatic vegetation to the detriment of fishing, bathing, and boating. We have been conducting limited tests on various control measures but can report very little progress. All of the methods which we have tried are either very expensive, hazardous to people or animals, or damaging to fish production. This problem is worthy of more attention than it has received because we are facing loss of considerable recreational water from excessive weed growth.

Aquatic weed control, algal control, and efficient pond fertilization are fundamentally closer to agricultural problems than to fishery management. Moreover, the application of sound knowledge to these problems would benefit a considerable segment of our population. For these reasons it would seem advisable to make funds available to some research agency, such as the Connecticut Agricultural Experiment Station, for the purpose of carrying on the necessary studies.

In the non-war years between 1938 and 1949 we have been systematically surveying the lakes and ponds of the state for the purpose of gathering information which might be applied to improve fishing in such waters. This work was done by a field crew composed of biologists from various universities together with our own field men. At the end of last summer more than half of the state had been covered by the survey crew. For reasons of economy, no temporary help was hired in 1950 and the survey work was largely stopped. We have done as much of this work as was possible this year with our limited permanent staff.

We have continued the policy of trying to give consulting service to people and groups with fishery problems. There is a continuing interest in this state in small pond construction. No one knows just how many new ones are built each year, but the number probably exceeds one hundred. Many of these new pond owners come to us for advice and help in setting up a fish management program. Practically the full-time services of one biologist are required to take care of this work.

In the early fall of 1949 we removed the fish populations of three ponds by poisons so that these ponds could be managed for trout. There will probably be much more of this type of reclamation work done as people in this state become aware of its advantages in producing low-cost trout fishing.

There has been a general decline of shad in recent years along the entire Atlantic Coast. The Connecticut River run has followed this general trend, but has not suffered as badly as have the other shad rivers of the east coast.

The decline of shad caused Congress to appropriate funds (\$75,000 per year for six consecutive years) to the U. S. Fish and Wildlife Service for an investigation of this species which, it is believed, should provide information for sound management program. The investigation got underway this spring. Work was concentrated on the Hudson River, but one federal biologist was assigned to Connecticut. We assigned one biologist and necessary equipment to the project. Emphasis was placed upon marking shad. During the run 1,374 shad were marked with our tags. Some work was started toward locating the important shad spawning areas.

Next year the federal service plans to concentrate more men and equipment on the Connecticut River.

### DIVISION OF GAME RESTORATION

During the 1949 hunting season the hen pheasant, as well as the male, was declared legal game following the enactment of a law at the 1949 session of the General Assembly. The hen pheasant was once before considered legal in the hunter's bag during the period 1905-1918.

It will be a number of years before it can be determined how much wisdom there was in this change of policy.

The legalized shooting of hen pheasants allowed the Department to purchase pheasants from commercial game breeders in an equal sex ratio rather than the preponderance of male birds of recent years. Under this plan, more than twice as many shootable pheasants were available for release during the 1949 gunning season.

However, with this heavy liberation schedule during the hunting season, the Warden Service was unable to carry on the necessary patrol and law enforcement work on the State-regulated shooting grounds with the result that some landowners have withdrawn their property from Department-controlled areas because of the lack of patrol. If a satisfactory solution of the patrol problem is not found soon, we stand to lose more acreage each year.

### GAME DISTRIBUTION

Fiscal Year 1949-1950

Pheasants	Cocks	Hens	Total
Fall, 1949			
During Season (Dept. Regular)	19,412	16,509	35,921
Post Season (Dept. Regular)	0	0	0
Six-Week Program	4,716	4,314	9,030
Cooperative liberation (Dept's share)	473	409	882
Spring, 1950			
Regular Spring (Dept.)	565	2,889	3,454
Six-Week Program	35	152	187
Cooperative liberation (Dept's share)	39	244	283
	25,240	24,517	49,757

Quail liberation—600 birds.

Cooperative Raccoon liberation—62 raccoon.

Cooperative Rabbit liberation—12 rabbits.

Cooperative programs with sportsmen's clubs continue at the same level as outlined in the 1948-49 annual report. However, there is an increasing interest in field trials for hunting dogs. Experience in the development of areas where these trials are held indicates that State-owned parcels, similar to Pelton's Pasture in East Windsor, should be strategically located about the state for this growing field sport. Some of these areas might be developed in State Forest holdings; others would have to be purchased outright.

If the requests by sportsmen's organizations to import rabbits was any indication, 1949 was apparently a low point in the rabbit population

cycle. Recent investigations in neighboring states indicate, however, such importation to be expensive and, in addition, to greatly endanger the health of the human population through the introduction of tularemia, Rocky Mountain spotted fever and, more recently, bubonic plague. Organized sportsmen's groups in Connecticut are slow to accept a rabbit trapping and redistribution program as outlined in 1946 by the Department.

To help the commercially operated State-regulated shooting preserves compete with New York shooting preserves, some relaxation in the percent kill of the number of pheasants liberated is needed. The allowable kill of 75 percent of those pheasants liberated should be increased to 90 percent.

### GAME POPULATION TRENDS

Trends in Connecticut game populations by species are briefly given as follows. More complete information on this subject may be obtained by writing for Pittman-Robertson Bulletin No. 3 entitled, "Estimating Game from Licensee Reports," by William Sondrini.

#### MAMMALS

*Bobcat*: Bobcats have been less numerous during the past ten years than they were during the earlier period. A high in abundance occurred in 1924-1925, with minor peaks in 1929 and 1937. Decided drops in population occurred in 1923, 1928, 1938, and 1946.

*Fox*: Foxes increased rapidly from 1929 to 1937 and have maintained relatively high numbers to 1946. Since 1940 when the data became available by species, the red fox has been two to three times as numerous as the gray fox. Red fox numbers show an upward trend while grays are decreasing.

*Hare*: The hare population shows extreme variations: a period of abundance occurred from 1940 through 1942; a rapid drop occurred in 1943; an increase occurred in the most recent years.

*Mink*: Mink have shown a general downward trend to 1931. They increased until 1935, but remained below previous peak numbers. Since 1935 they have declined steadily. With increased demand for farm-raised pelts, the demand for wild pelts may have declined in recent years. Thus, the kill figures as an index to numbers may be too low.

*Muskrat*: Muskrats have increased slightly in the past ten years. Their numbers rose from 1923 reaching a major peak in 1935 when they decreased rapidly until 1937. An upward trend after that year is apparent.

*Otter*: The otter population shows a gradual decline during the years studied. Periods of abundance occurred in 1930-1933 and again in 1941-1942. Periods of scarcity occurred in 1923-1926, 1928-1929, 1934-1940, and 1943-1946 with the latest period showing some improvement over previous lows. In general, their numbers were low for from two to five years, increased rapidly to peaks lasting from one to four years and then rapidly decreased.

*Rabbit:* Rabbits have maintained their numbers over the entire period showing a slight increase in the past ten years. Peaks of abundance occurred twice, and dips to scarcity occurred three times. Prior to 1936 only one year of abundance is noted. Numbers increased rapidly in 1937 and were maintained for three years. A sudden drop occurred in 1941.

*Raccoon:* Raccoons show a slight increase for the past ten years over previous years. From a low population recorded in 1926 numbers increased to major peaks in 1933 and again in 1935. A rapid fall from 1935 to 1937 has been followed by a relatively stable population.

*Skunk:* Skunks have decreased in the past ten years. Marked annual variations occurred to 1927, and in general the numbers were high. After 1928 numbers declined gradually to a low in 1933. Upward and downward trends between the years 1932-1935 and 1935-1938 are apparent.

*Squirrel:* Squirrels were slightly more numerous during the last ten years than in the previous years. No regularity is apparent in the variations from year to year. With the exception of the periods from 1924 to 1927 and 1929 to 1933 when the rise to peak numbers was gradual, fluctuations between peaks and periods of scarcity occurred within one or two years. Since 1941 major variations have occurred annually. Squirrels reached as high a peak of abundance in 1946 as in any previous year.

*Weasel:* A period of scarcity in 1924-1926 was followed by a high in 1933. Fluctuations indicating abundance or scarcity occurred annually from 1927-1936. The trend since 1938 may be downward with both 1944 and 1946 lower than previous years.

## BIRDS

*Coot:* For coot it is necessary to separate the periods before and after 1939 because of the enormous change in the figures. The increase in the latter period was considered to be due to factors other than population. In the early period fluctuations were relatively small. A low occurred from 1934-1937. With a shorter hunting season during these years, a population higher than is indicated by the take was possible. Abundance in the latter period was high in 1940, 1941, and 1944 and low in 1942-1943 and 1945-1946. These changes in population follow the changes indicated for the ducks.

*Duck:* No increase is indicated for the past ten years over numbers in previous years. The population remained relatively high from 1923-1933 with the exception of a sudden drop in 1931. A rapid fall occurred between 1933 and 1935. A gradual rise to the highest peak, 1941, followed. Numbers fell to the level of the 1923-1933 period in 1943. Increase occurred again in 1944 with a rapid fall to 1946. Many changes in hunting regulations on ducks have occurred since 1930. These changes have influenced the take of duck. Hence kill figures as an index to abundance may be questionable.

*Geese:* Geese dropped after 1923 but gradually increased to a peak in 1928. A sudden drop followed in 1929. Minor variations, largely downward, occurred to 1936. Numbers increased gradually from 1936-1941 followed by a rapid fall in 1943. Rapid increase in 1944 was followed by a sudden drop in 1945. Several changes occurred in the hunting regula-

tions for geese after 1930. As these changes were found to affect the take, the goose kill after 1930 is a questionable index to abundance.

*Rail*: Numbers fell rapidly after 1923 and increased gradually to a peak in 1930 followed again by a drop in 1931. Another peak was reached in 1932 with a gradual fall to a low in 1937. With minor variations, rail have not bettered their position since 1937. For the years from 1929-1934, kill figures as an index to abundance may be slightly too high due to less restricted hunting regulations.

*Snipe*: In general, fluctuations from periods of abundance to periods of scarcity occurred gradually. From a peak in 1923 numbers decreased to a low in 1928, increased to a high in 1932, and then decreased to 1936. From 1936 to 1940 snipe did not increase, and the season was closed in 1941. For the years from 1934-1940 kill figures as an index to abundance may be slightly too low due to more restricted hunting seasons.

*Woodcock*: With the exception of a drop in numbers in 1924, woodcock remained relatively constant to 1929. An increase occurred in 1930 and was maintained in 1931. Numbers decreased rapidly in 1932 and continued to decrease gradually to a low in 1935. After an increase in 1937, woodcock decreased gradually to a low in 1943 from which no recovery has been made. It is possible that numbers may have been slightly higher from 1929-1946 than the kill indicates due to more restricted hunting seasons.

*Plover*: A drop of over 70 percent occurred in 1924 followed by another drop in 1925. The season was closed in 1926.

*Yellowlegs*: A gradual decline to 1925 with a drastic drop of 57 percent in 1926. Season closed in 1927.

*Pheasant*: In general, liberations influenced the numbers in the field. With the exception of 1943, the numbers bagged were well over twice the numbers released. Since 1943 liberations may have accounted for more than half of the total bag. Production in the wild has been poor since that year.

*Grouse*: Grouse dropped rapidly in 1924. A slight increase occurred in 1925-1926. Numbers dropped so low in 1928 that the season was closed in 1929. A fair increase was indicated in 1930 which maintained itself to 1934. A rapid rise occurred in 1935 with a drop back to the 1934 level in 1936. Since 1936, except for a minor increase, grouse have shown a gradual decline with the lowest number occurring in 1945. Part of this decline may have been due to reduced hunting pressure as a result of more difficult hunting conditions.

*Quail*: Numbers fell so rapidly after the opening of the season in 1933 that a closed season was declared from 1937-1940. Since 1941 the season has been open in only three counties. Numbers of quail have apparently been maintained by annual stocking in these counties.

## DEER

The number of deer hunting permits issued in 1949, a total of 4,050 permits, leveled off from the 1948 peak of 4,078 permits. Fifty-six applications for permits on properties under ten acres were inspected by the Warden Service and the permits issued were restricted to the use of shotguns only. Under Section 487a of the 1949 Supplement to the General

Statutes, landowners or lessees may make application to use a jacklight for the purpose of taking deer causing damage to agricultural crops. Sixteen applications were made, nine were approved, and five deer were reported killed by persons holding jacklight permits.

It has been difficult for the Department to determine the relative numbers in our deer herd from year to year. During 1939-1949 a comparison of deer reported killed by automobiles with estimated total miles driven by motor vehicles indicates that we may assume that deer killed by automobile is an index to the deer population. If this is true, the figures indicate a peak in population in the year 1940, and a reduction in the herd by the year 1942. Since 1942, the herd has remained fairly static in size, but with a slight constant decline.

### AIRCRAFT SPRAYING

Applications for permits to disperse insecticides from aircraft nearly doubled the applications of 1948. Permits for treating tobacco, potatoes, and corn, together with some marsh land spraying for mosquito control, have totaled over 14,000 acres.

Controlled studies with penned birds, mammals, and fish indicate that we can expect no direct effect upon our game species when the following are used in spray form in amounts recommended by the Connecticut Agricultural Experiment Station: gamma benzene hexachloride (Isotox); hexaethyl tetraphosphate (Vapatone); and diethyl p-nitrophenyl thiophosphate (Parathion).

The indirect or long-term effect of these chemicals on wildlife is not known. Studies on a scale greater than we are in a position to undertake at this time should be made to determine these facts.

Intensive investigations by the U. S. Fish and Wildlife Service have resulted in the following recommendations for minimizing danger to wildlife in the use of DDT (dichlorodiphenyltrichloroethane).

1. Avoid direct application of DDT to streams, lakes and coastal waters.
2. In spraying over aquatic areas (marshes, swamps, etc.) use 1/5 pound or less DDT to an acre in oil solution.
3. In forest areas use less than 2 pounds DDT to an acre to avoid damage to birds, amphibians and mammals.
4. Avoid spraying during nesting period of birds (April through June).

### LITCHFIELD-MORRIS SANCTUARY

Investigation and development work on the Litchfield-Morris Sanctuary is following the general program outlined in the 1948-1949 report. Considerable success has been attained in the trapping and banding of waterfowl on this refuge.

### PITTMAN-ROBERTSON PROGRAM

Three classes of work were carried on during the year. Land acquisition consisted of completion of the purchase of the Charter Marsh area

in Tolland. This area contains 235 acres, of which, about 125 acres are marsh land along the headwaters of the Skungamaug River. Two old dikes are present on the property. The repair of these dikes will flood an area suitable for waterfowl breeding.

Development work has been completed in conjunction with the Forestry Department to improve conditions for game in and around the plantation areas on the West Block of the Naugatuck State Forest.

Approximately 240 acres in Colchester, known as the Larson Lot, have been transferred from Forest to Fish and Game administration. On about half of this area intensive development has been carried out to make the area more suitable as environment for cottontail rabbits. It is expected that this area will be suitable for Beagle Trials and serve as a demonstration and experimental area. Deer have been attracted to the opened and fertilized areas from surrounding woodland.

Investigational work has evaluated, but not conclusively, the value of early and late spring releases of pheasants as breeders, and shown that so-called spent breeders are capable, with adequate feed, of producing a full clutch of eggs. Waterfowl have been branded at five areas in the state and their population estimated during the breeding season and again during the winter. Population estimates on other game species have been kept up-to-date.

Federal allotments to the states for the program have followed income from the tax. Connecticut's share for the 1949-1950 fiscal year was \$49,566.98, a reduction of \$7,336.12 from the maximum in 1948-1949. A further reduction is expected for the coming year.

The work now underway consists of a continuation of the investigational program and publication of material already obtained. Selected plantation areas in the eastern part of the state will be treated, in cooperation with the Forestry Department, to improve conditions for game. A demonstration and Beagle Trial area will be developed, similar to the Larson Lot in Colchester, on the Mohawk State Forest. Development work will be carried out in the Tunxis State Forest to benefit the hunting there. Plans are being drawn for the water control structures necessary to develop Charter Marsh for waterfowl and fur-bearers so that this work may be undertaken this year.

### RABIES A THREAT TO DAIRY HERDS

Dairy herds in western New York have suffered considerable damage from rabies transmitted by foxes. The state agencies in conservation, public health and agriculture have cooperated in the program of control which has been under way there. One of the methods of checking the spread of the disease is the reduction of the fox population by trapping. This is an expensive procedure but is apparently effective in the New York program.

Although the disease has not spread eastward past the Hudson River, it is not too early to plan cooperative control measures and to get estimates of fox populations so that an effective trapping program can be rapidly put into operation. Our Board should be given authority to modify the method of taking foxes as provided in the present law in areas where control measures are necessary.

## LABORATORY MARINE INVESTIGATIONS

During the year 1949-1950 the Connecticut State Board of Fisheries and Game continued its study of the marine fish of the Southern New England waters through cooperation with the Bingham Oceanographic Laboratory, Yale University.

This year, the basic information which the Bingham Laboratory has accumulated was particularly useful on two occasions. A group of men who have been contemplating the erection of a fish-rendering plant at Stonington needed data on what might be the expected yield of "trash" fish from the area from month to month and from year to year. The laboratory was able, as a result of its studies, to provide the required estimates based on its continuing survey and its knowledge of the biology of the fish concerned. Similarly, this sort of information on both the commercially important and the trash fish was valuable to the Commission set up by Governor Bowles to study the question of whether or not the State should erect a public fish dock at Stonington, and a member of the Laboratory staff served on the Commission from its inception.

The Bingham Laboratory has concentrated its attention on the life history and habits of the common skate. Since this fish is an important element in the rapidly expanding trash fishery, we need to know how the stock will stand up under intensive fishing. It is also a competitor with other fish, some of them important commercially, for the same kind of food and its removal may therefore be advantageous to other species. We need to understand the breeding habits, number of offspring, movements, growth rates, etc., of this skate if we are to give intelligent answers to the questions raised above.

These basic, long-term studies, in which both seasonal and annual fluctuations in abundance are observed and in which the life histories and interrelationships of the species concerned are investigated, are fundamental to the rational utilization of our marine resources. Reprints of the papers published by the staff of the Bingham Oceanographic Laboratory in the course of these researches are available on request.

## DIVISION OF FISH RESTORATION

During the year 1949 a total of 562,486 trout weighing 50,973 pounds was raised and distributed from State hatcheries and rearing stations. From commercial dealers there were purchased 141,752 trout weighing 57,938 pounds.

Twenty-six thousand four hundred eighty warm water fishes were purchased from commercial fishermen and distributed in ponds reserved for children under sixteen years of age.

Five million pike perch eggs received from the U. S. Fish and Wildlife Service, from which 3,750,000 fry were hatched, were distributed in Candlewood Lake.

Smallmouth bass fry were distributed in several lakes and ponds.

Fourth-stage lobsters totaled 178,650. Adults returned to Connecticut waters totaled 1,113.

Beaver Brook Rearing Station raceways have been increased and several new wells have been completed.

A cold storage room has been completed at the Burlington Hatchery with a capacity of approximately twenty tons.

Work started last fall on replacing fresh water and sewer lines at the Burlington Hatchery has been completed as far as possible this year. The work will be finished in 1951.

Commercial fishermen reported that 13,500,000 pounds of fish were caught in 1949 valued at \$3,000,000. The value of boats and gear was estimated as \$1,555,000.

REPORT OF THE  
BOARD OF  
FISHERIES AND GAME  
1950 - 1951

*Reprint from*

DIGEST OF CONNECTICUT ADMINISTRATIVE  
REPORTS TO THE GOVERNOR '50-'51

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1951

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## BOARD OF FISHERIES AND GAME



*Established*—1866

*Statutory authority*—General Statutes, 1949 Revision, Section 4846 to Section 5020

*Administrative head*—RUSSELL P. HUNTER, Superintendent

*Deputy administrator*—ROGER C. NORLING, Executive Assistant

*Central office*—State Office Building. Telephone 7-6341, Ext. 2369

*Average number of full-time employees*—80

*Funds for operation fiscal year 1950-1951*—  
Legislative appropriation, \$684,300

*Expenditures fiscal year 1950-1951*—  
Recurring operating expenditures, \$582,785.81  
Capital outlay, \$29,216.95

*Organization structure*—Bureaus: Administration, Game Restoration, Trout Restoration, Fisheries Management, Law Enforcement

### BOARD MEMBERSHIP

The board is made up of three members appointed by the Governor for six-year terms. The present chairman is John P. Montgomery of Mt. Carmel who is filling the unexpired term of F. L. Sheane until 1951. Richard T. Cooke of Torrington serves until 1955, and Dr. John E. Flaherty of Rockville completes a second term of appointment in 1953. The superintendent appointed by the board is R. P. Hunter.

### ADVISORY COUNCIL

The Advisory Council is a group of sportsmen which serves as a liaison between the sportsmen and the Department. The council was first organized in 1932 and has served continuously since that time. It meets monthly with the department at the Hartford office or in the field. Two members from each county serve four-year terms after election to membership by the council. Three members-at-large serve three-year terms. The present membership is:

*Hartford County*: Richard D. Pitney, South Glastonbury; Philip E. Devnew, Granby.

*Litchfield County* E. A. Ambler, New Milford; Henry J. Heiftje, Torrington.

*Middlesex County*: William F. Petras, Middletown; William Van Vleck, Old Saybrook.

*Fairfield County*: John Kuliesh, Danbury; Howard Wilson, Norwalk

*Tolland County*: George P. Hall, Woodstock Valley; Leo Flaherty, Rockville.

*New Haven County*: Charles Letson, Madison; Dr. J. F. Quinn, New Haven.

*New London County*: Dr. Willard J. Morse, New London; Leonard Partridge, Norwich.

*Windham County*: Raymond D. Chamberlain, North Windham; Henry Danielson, Putnam.

Members-At-Large are George Jones, Norwalk; Kenneth Little, Rockville; and Arthur Bissell, Suffield.

### DIVISION OF ADMINISTRATION

During the fiscal year 1950-1951, 108,456 hunting, trapping, and angling licenses were accounted for as having been sold by town clerks. Income from the sale of licenses by town clerks amounted to \$425,146. Fees collected by this division from the sale of commercial licenses, non-resident hunting and angling licenses, duplicate hunting, angling and trapping licenses, and miscellaneous permits amounted to \$16,113.50.

Income from the sale of fishing licenses increased \$21,166 during the fiscal year ending June 30, 1951. Income from the sale of hunting licenses increased \$2,924.

A financial report for the year ending June 30, 1951 follows:

### DEPARTMENT INCOME AND EXPENDITURES

#### Fiscal Year 1950-1951

#### Means of Financing

Cash balance beginning of fiscal year:

Game Fund	\$ 29,706.12	
Inland Fish Fund	55,281.04	
Marine Fish Fund	3,553.34	\$ 88,540.50

Receipts from sale of angling licenses and other sources:

Game Fund—	
Hunting and trapping licenses	\$ 98,237.27
Combination hunting and angling licenses	53,146.50
Combination hunting, trapping and angling licenses	7,671.33
Pittman-Robertson reimbursement	32,989.42
Game Breeders' licenses	1,310.00
Permits to kill deer	1,851.00
Permits to operate private shooting preserves and to hold dog training trials	344.50
Fur buyers' licenses	229.00
Taxidermist licenses	145.00
Sale of confiscated venison	242.75
Sale of pheasant tags	832.45

Miscellaneous	191.80		
Transfers to fund	2,454.91	\$199,645.93	
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Inland Fish Fund			
Angling licenses	\$209,685.73		
Combination hunting and angling licenses	53,146.50		
Combination hunting, trapping and angling licenses	3,835.67		
Inland commercial fishing licenses	783.00		
Shad net registrations	875.00		
Licenses to operate commercial hatcheries	155.00		
Rental of boats	1,206.75		
Refunds of expenditures	1,370.20		
Miscellaneous	589.87	\$271,647.72	\$471,293.65
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Appropriation from General Fund		218,357.02	
Less restricted appropriations		50,100.43	\$168,256.59
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<b>TOTAL CASH RESOURCES</b>			<b>\$728,090.74</b>
<hr/>			
Expenditures			
Game Fund			
Law enforcement	\$ 30,592.26		
Game management	17,698.03		
Pittman-Robertson projects	48,381.71		
Purchase of game	90,391.41		
Capital projects	3,485.85		
Miscellaneous	4,526.35	\$195,075.61	
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Inland Fish Fund			
Law enforcement	\$ 46,940.61		
Operation of hatcheries	111,362.80		
Purchase of fish	70,687.31		
Fisheries management	24,576.16		
Miscellaneous	2,918.43	\$256,485.37	
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Marine Fish Fund			
Law Enforcement	1,715.00	1,715.00	
General Fund			
Administration	41,862.09		
Land and water acquisition	20,054.01		
Law enforcement	74,395.20		
Lobster restoration	16,305.10		
Capital projects	4,247.21		
Miscellaneous	1,863.17	\$158,726.78	\$612,002.76
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Balances on hand at end of fiscal year:			
Game Fund		\$34,499.19	
Inland Fish Fund		70,220.64	
Marine Fish Fund		1,838.34	
General Fund		9,529.81	\$116,087.98
<hr/>			

## DIVISION OF WILDLIFE PROTECTION AND LAW ENFORCEMENT

The authorized permanent, full-time positions in this division are one chief warden, eight state wardens and twenty-six deputy wardens. During the fiscal period two deputy warden vacancies occurred, which have not been filled.

A function of the warden service, as directed by the fish and game divisions, is the procurement, by lease or agreement, of hunting and fishing

rights on privately controlled lands and waters. This program has been in effect for many years and has resulted in making available to the general public thousands of acres of hunting land and many of the streams capable of providing trout fishing. When this program was originally initiated it was board policy to employ special patrolmen, on a per diem basis, during the hunting season on each of the regulated hunting areas, and during the fishing season on the principal streams and ponds stocked with trout. During the 1950 hunting season the employment of special patrolmen was discontinued entirely. During the 1951 fishing season only three special patrolmen were employed, two at the shad fishing area on the Connecticut river at the Enfield Dam and one at West Hill Pond.

*Arrests and Warnings:* During the fiscal year the wardens made a total of 187 arrests with 175, or 93 percent, resulting in convictions. During this same period the division issued 761 warnings. Of the total arrests 90 cases, or 48 percent, involved evasion of the license requirement laws.

*Marine Patrol:* As required by statute, five deputy wardens were assigned to marine patrol during the period from July 1 to September 15. During this assignment the remaining wardens take over the investigation of complaints and other routine matters in the areas normally covered by the deputies on marine patrol.

*Hunting and Fishing Accidents:* During 1950 only one person, a boy fifteen years of age, was fatally injured in a hunting accident. Only one fatal hunting accident occurred the previous year. This is a remarkable record in view of the fact that during 1950 the department issued 50,153 hunting and combination licenses. In addition, there are several thousand landowners, and minors between the ages of twelve and sixteen years, who hunt without the requirement of a license. During this same period fishing accidents took the lives of eight men, all over the age of twenty-one years and all of whom were drowned. It would appear that safety campaigns concerning the safe use of firearms are producing results, but the hazards of small overcrowded boats on rough water need more publicity. Non-fatal accidents reported by the wardens during 1950 totaled fifteen persons injured in hunting accidents and two persons injured in fishing accidents.

*Deer Kill Investigations:* During the fiscal year wardens investigated the killing of 165 deer from the following causes: 87 by automobile, 44 by gunshot, 9 by dogs, 5 accidental, 4 injured, 2 by train, 2 by drowning, and 11 from unassigned causes.

## DIVISION OF GAME RESTORATION

### *Game Purchase and Distribution:*

#### Fiscal Year 1950-1951

Pheasants	Cocks	Hens	Total	Cost
Fall, 1950				
During season (dept. regular)	15,692	14,619	30,311	\$71,967.24
Post season (dept. regular)	61	369	430	1,075.00
Six-Weeks program	4,554	4,906	9,460	10,542.96
Cooperative liberation (Department's share)	164	155	319	759.22

Spring, 1951				
Regular spring (dept. regular)	178	1,537	1,715	3,233.63
Six-Weeks program	20	65	85	191.49
Cooperative liberation (Department's share)	48	210	258	487.62
	20,717	21,861	42,578	\$88,257.16
Quail liberation (dept. regular)			1,000	1,500.00
Cooperative liberation (dept.'s share)			50	100.00
Cooperative raccoon liberation			102	513.25
Cooperative rabbit liberation			7	21.00
				\$90,391.41

During the past twelve years the purchase and inspection of pheasants was carried on wholly by the Game Division. With the inauguration of the six-weeks-old pheasant program with sportsmen's clubs, the increased use of airplanes in dispensing insecticides and an effort to enlarge the waterfowl program, less time has been available for the inspection of game farms. This year the warden service is making periodic inspections of the game farms in their districts holding pheasant contracts. This aid from the warden service now allows the game division to concentrate its inspection work at farms where disease and other losses are most prevalent, and provides more time for other duties.

*Pheasant Diseases:* Pheasants are not ordinarily highly susceptible to the common poultry diseases. In recent years as many as fifty pheasant farms (involving perhaps 7,500 birds), have had their breeding stock tested for pullorum. The number of positive cases in all these tests was less than 20 birds. Newcastle disease, infectious bronchitis, and laryngotracheitis has yet to be isolated in Connecticut pheasant flocks. Heavy losses have occurred on four occasions on Connecticut pheasant farms from botulism and fowl cholera.

It has been observed in the six-weeks-old pheasant program that many of the club pens are now heavily infested with tapeworm and that these parasites become quite a factor during wet periods in the rearing seasons. The parasites actually cause some losses as well as being a contributing factor to feather picking or cannibalism. One of our problems is to devise a means of control of this parasite.

*Six-Weeks-Old Pheasant Program:* The following table summarizes the first five years of the six-weeks-old pheasant program with sportsmen's clubs:

#### SUMMARY OF SIX-WEEKS-OLD PHEASANT PROGRAM

Year	Number of cooperating clubs	Number of birds purchased and delivered to clubs	Total cost of birds purchased	Total number birds raised and liberated	Percent raised and liberated of total number received	Total cost to dept.	Average cost per bird liberated
1946	23	8,238	\$11,264.20	6,728	81.7	\$11,708.70	\$1.74
1947	37	12,635	16,181.75	10,456	82.8	16,793.75	1.61
1948	32	11,435	14,136.25	9,251	80.9	11,868.25	1.61
1949	34	10,695	11,607.80	9,217	86.2	11,796.80	1.28
1950	34	11,020	10,649.45	9,545	86.6	10,734.45	1.12

*Cooperative Programs:* The numbers of sportsmen's organizations participating in cooperative programs with the game division has now increased to fifty-nine (59). In some instances, the division's contributions toward these programs is supplying stock and materials; in other programs, field work and planning is the department's share.

The following table lists the types of cooperative programs, the numbers of clubs taking part in a program, and the approximate cost to the department for stock and materials:

Programs	Number of Clubs participating	Approximate cost
Cooperative pheasant liberation	2	132.00
Cooperative pheasant liberation field trials	14	1,103.00
Winter feeding program	11	325.00
Cooperative raccoon liberation	5	425.00
Tree and shrub planting program	15	630.00
Six-Weeks-Old pheasant program	34	10,733.00
Regulated shooting program	35	2,542.00*
Grain planting program	2	36.00
Waterfowl restoration	2	393.00
Cooperative rabbit redistribution	1	51.00
Regulated private shooting preserves	9	1,050.00 (income)**
	130	\$1,050.00
		\$16,370.00
		—1,050.00
		\$15,320.00

\*Does not include pheasant stocking.

\*\*This income derived from permits and tags.

*Hunting Grounds:* The department controls the hunting rights on approximately 314,000 acres of land by three methods: ownership, paid lease and written agreement. This acreage represents nearly 10 percent of the state's total area.

The state-owned properties are of two categories: Department-owned waterfowl areas and forest game lands in state forests. Private land hunting rights are leased usually, for a four-year period at 10 cents per acre per year. These leases at present are costing the department approximately \$6,300 annually. The hunting rights on state permit-required or state-regulated shooting areas are acquired by written agreements with landowners at no cost to the department.

*Regulated Shooting:* Ordinarily, sportsmen's organizations obtain the regulated shooting agreements from the local landowners. These agreements may be terminated on thirty days' written notice by either party.

In the terms of the agreement, the state is to provide posting, patrol, stocking and a permit system to control the hunting pressure in return for the hunting rights. The numbers of regulated shooting areas (39) has remained fairly constant in recent years; however, the total acreage under agreement has decreased steadily since 1945. This decrease in acreage is thought to be the result of greater urbanization of our agricultural areas and a change in policy which discontinued the use of part-time patrolmen during the hunting season on these areas.

*Aircraft Spraying:* Fewer permits were issued for spraying agricultural crops by airplane this summer than in 1950. More permits were is-

sued for spraying marshlands as means of controlling mosquitoes. New legislation makes it necessary that the Mosquito board file a copy of the spray plan and marshland to be treated with spray in the town clerk's office and publish a copy of such an order each week for two weeks in newspapers having a circulation in the towns in which spraying is to be done.

### PITTMAN-ROBERTSON PROGRAM

Development work has been carried out on four projects. Forest operations, with the cooperation of the Park and Forest Department, have improved conditions for game on plantation areas on Meshomasic, Nye-Holman and Nipmuck State Forests. Work has continued on the Larson Lot Beagle Trial Area in Colchester to add suitable food and cover for cottontail rabbits.

Connecticut's share of the Federal Excise Tax on sporting arms and ammunition which finances three-quarters of the cost of this program was \$43,367.58 for the fiscal year 1950-1951. A substantial increase is expected for the coming fiscal year.

### DIVISION OF FISH RESTORATION

Twenty-two thousand, one hundred sixty-nine adult and 35,950 fingerling warm water fishes were distributed in Connecticut lakes and ponds. These fish were purchased from commercial fishermen and salvaged in the draining of ponds.

Five million pike perch eggs were received from the New York Conservation department from which 4,750,000 fry were hatched and distributed in Candlewood Lake.

Twenty-four thousand smallmouth bass fry, collected in cooperation with the U. S. Fish and Wildlife Service at Wangum Lake, Litchfield county, were distributed in suitable lakes and ponds.

Two rearing pools at Kensington Hatchery were stocked with smallmouth bass fry and produced 2,263 fingerlings. Smallmouth bass were recovered from the pools and were distributed in lakes and ponds. Seven thousand largemouth bass fry and 5,000 fingerlings were purchased and released in lakes and ponds.

The replacing of fresh water and sewer lines at the Burlington Hatchery has been completed. A pool at Punch Brook, formerly used to rear warm water fishes, has been rebuilt and is now being used for trout rearing. Another pool of this type will be rebuilt and used for trout rearing in the near future.

Beaver Brook Rearing station, Franklin, was closed November 30, 1950. Attempts to locate a sufficient water supply for the operation of a trout rearing station were unsuccessful.

Fourth stage lobsters totaled 507,000. Adult lobsters returned to Connecticut waters after hatching off fry totaled 1,294.

Commercial fishermen reported that 18,000,000 pounds of fish were caught in 1950 valued at \$3,500,000. The value of boats and gear was estimated as \$2,000,000.

## LABORATORY MARINE INVESTIGATIONS

During the year 1950-1951 the study of the marine fishes of the Southern New England waters was continued through cooperation with the Bingham Oceanographic Laboratory, Yale University.

Most fisheries investigations concentrate on a single species of fish, and such studies are usually undertaken only when the stock shows signs of depletion and the fishermen, commercial or sports as the case may be, become alarmed at the prospects for the future. Investigations of this sort have two serious defects. First, the fish is not studied in relation to the community as a whole—*i.e.*, in relation to other species with which it competes for food, etc. Second, the stock is only studied after man has made sizeable inroads on the population and perhaps upset its normal balance with other species in the area—*i.e.*, it is only studied when the population is under abnormal conditions.

For the past few years the staff of the Bingham Laboratory has centered its attention on the fishes taken by the Connecticut trawl fishermen in the Block and Long Island Sound area. It has acquired a detailed knowledge of the composition of the population of these demersal fishes both by species and by season, and the life histories of the more prominent species are beginning to be known rather thoroughly. Furthermore, the bottom fauna of invertebrates has been studied in great detail, as have the feeding habits of the various fishes. The investigation is, therefore, in the nature of a study of population dynamics. As such, the knowledge accumulated is of considerable practical value since it enables prediction of such things as total annual poundage available, the effect of intensive fishery for one species on the rest of the population, etc.

In the past year particular attention has been paid to the two most prominent species in the "trash" element of the catch, the longhorn sculpin and the little skate. The life histories of both these fishes and their relationships to the rest of the population are now known for the first time. Work on the skate has not yet been published, but the reader is referred to "The Biology of the Longhorn Sculpin, *Myoxocephalus octodecimspinosus* Mitchell, with a Discussion of the Southern New England 'Trash' Fishery" by James E. Morrow (Bulletin of the Bingham Oceanographic Collection, Vol. XIII, Article 2, pp. 1-89, Feb., 1951) as an example of the researches here reported. This and other reprints are available on request to the Bingham Oceanographic Laboratory, Box 2025, Yale Station, New Haven, Connecticut.

## DIVISION OF FISHERIES MANAGEMENT

*Stream Leasing:* The stream leasing program has expanded steadily through the years until at the present time the state holds leases on thirty-five streams and these leased sections total over 118 miles of stream bank. The cost of this program in 1950 was \$2,986.13, or an annual average of \$25.30 per stream bank mile.

The mileage of streams owned by the state has never been determined accurately; neither do we know exactly how much mileage is controlled through cooperative agreement with property owners. There is an additional small mileage which is state-controlled through ownership of per-

manent fishing easements. The total of state-controlled stream bank under the various arrangements mentioned above is in the neighborhood of 200 miles.

Connecticut holds a few permanent fishing easements on streams although some states, notably New York, have a sizeable acquisition program of this nature. It is not always possible to buy fishing rights, but wherever the opportunity presents itself, this type of acquisition should be substituted for short-term leases. There are several streams in the state such as the Hockanum River which are potentially good trout streams were it not for the fact that they are grossly polluted. Right now, fishing rights on such streams have little or no value.

*Stocking:* The following tabulations show the number, species, size and poundage of trout stocked by the department in 1950 and 1951. The 1950 figures are for that calendar year; the 1951 figures cover trout stocking between the dates of January 1, 1951 and September 1, 1951. Some additional plants of fingerling trout and yearling rainbows will be made during the remainder of 1951. However, since the bulk of the trout which will be liberated in 1951 were stocked in the spring of 1951, it was felt desirable to include the figures in this form in the interest of presenting current information.

#### SUMMARY OF TROUT PLANTED DURING THE CALENDAR YEAR 1950

	No. of Trout	No. of Lbs.
<b>Fry</b>		
Brook trout	201,050	50
Brown trout	117,347	36
	<hr/>	<hr/>
	318,397	86
<b>Fingerlings</b>		
Brook trout	166,862	2,428
Brown trout	95,240	1,505
Rainbow trout	29,612	155
	<hr/>	<hr/>
	291,714	4,085
<b>Adults</b>		
Brook trout—1 yr.	163,952	33,443
Brook trout—2 yr.	32,057	12,337
Brown trout—1 yr.	1,365	180
Brown trout—2 yr.	96,211	42,389
Rainbow trout—2 yr.	51,171	19,430
	<hr/>	<hr/>
	344,756	107,779
	<hr/>	<hr/>
<b>Total</b>	954,867	111,950

#### SUMMARY OF TROUT PLANTED JANUARY 1, 1951 TO SEPTEMBER 1, 1951

	No. of Trout	No. of Lbs.
<b>Fry</b>		
Brook trout	230,000	43
Brown trout	81,000	53
	<hr/>	<hr/>
	311,000	96

<b>Fingerlings</b>		
Brook trout	213,840	1,399
Brown trout	82,840	246
	<hr/>	<hr/>
	296,680	1,645
<b>Adults</b>		
Brook trout—1 yr.	58,705	9,770
Brook trout—2 yr.	52,852	21,620
Brown trout—1 yr.	12,375	1,224
Brown trout—2 yr.	101,464	44,469
Rainbow trout—1 yr.	4,185	153
Rainbow trout—2 yr.	56,624	23,124
	<hr/>	<hr/>
	286,205	100,360
	<hr/>	<hr/>
Total	893,885	102,101

Although this section is devoted to trout streams and although not all trout are stocked in streams, it seemed desirable to present here the complete stocking figures. In 1950, 274,586, or 79.65 percent of the adult trout and 92.6 percent of the fingerling trout were stocked in streams. In 1951 (to September 1) 71 percent of the adult trout and 93.3 percent of the fingerlings were stocked in streams; the remainder in each year were planted in lakes and ponds.

Previously we gave figures on population and license sales increases between 1930 and 1950 which showed that during that twenty-year period population increased 68 percent and the number of licensed anglers increased nearly 100 percent. In this same period of time the stocking of trout more than kept pace with increased angling pressure. In 1930 the department stocked 220,379 adult and 275,449 fry and fingerling trout. In 1950 the department stocked 344,756 adult and 610,111 fry and fingerling trout. These figures show the increase in numbers of trout released. However, poundage of trout is a better standard than numbers for comparing the increase in the trout program. In 1930 the total weight of adult trout stocked was 37,408 pounds; in 1950 the total weight of adult trout liberated was 107,779 pounds. In other words, the poundage was nearly tripled.

After the war there was a steady increase in license sales and this meant added revenue for fish work. More specifically, it meant more money for trout stocking. Hatchery expansion could not keep pace with the increase in revenue, so it became the practice of the department to buy trout on the open market. In 1950 the Department purchased 60,915 pounds of legal size trout which represented 54 percent of the total poundage liberated. In 1951 (up to August 23) 52,799 pounds, or 52 percent were purchased.

*The Lakes and Ponds:* There has been, in recent years, a tendency to extend the trout stocking to cover many lakes and ponds. For example, in 1945 twenty lakes received trout, in 1946 and 1947 the number was nineteen, in 1948 it was thirty-four, in 1949 it was forty-one, in 1950 it was forty-eight, and in 1951 fifty-two such areas were stocked.

*Special Fishing Areas:* This department has a long history of providing or sponsoring areas where those with specialized fishing interests could enjoy their sport. Connecticut was the first state to provide an

area for the exclusive use of women anglers. In 1933 a section of the Branford River was set aside for women and has been so restricted to the present. In 1937 the first "children's pond" was established at Meriden. It is thought that this was the first such area in the country and the idea of providing fishing areas for children near large centers of population has been widely copied by other states. Presently Connecticut has thirty-four ponds and streams stocked and restricted to this use.

In 1946 a state-owned section of the Blackledge River near Marlborough was set aside for the use of disabled veterans. Special fishing benches and wheel chair ramps were constructed on the stream bank; a tackle house and picnicking facilities were provided. Fishing in this area is restricted to those veterans whose disabilities are such that they could not fish for trout without the special facilities provided.

The department has restricted a total of eight stream sections and ponds for the exclusive use of fly fishermen. Some of these areas, such as the Francis L. Sheane Memorial area at Cornwall Bridge, were departmental projects. However, most of them have been established at the request of local sportsmen, usually as a condition for permitting public fishing—as for example, on the Yantic River.

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REPORT OF THE  
BOARD OF  
FISHERIES AND GAME  
1951-1952

*Reprint from*

DIGEST OF CONNECTICUT ADMINISTRATIVE  
REPORTS TO THE GOVERNOR, 1951-1952

*Volume VI*

*Published at*  
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1952

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## BOARD OF FISHERIES AND GAME



*Established*—1866

*Statutory authority*—General Statutes, 1949 Revision, Section 4846 to Section 5020

*Administrative head*—RUSSELL P. HUNTER, Superintendent

*Deputy administrator*—ROGER C. NORLING, Executive Assistant

*Central office*—2 Wethersfield Ave., Hartford; Telephone, 7-6341 Ext. 2369

*Average number of full-time employees*—76

*Expenditures fiscal year 1951-1952*—Recurring operating expenditures, \$511,427.81; Capital outlay, \$49,574.66

*Organization structure*—Bureaus: Administration, Game Restoration, Fish Culture & Management, Wildlife Protection and Law Enforcement

### BOARD MEMBERSHIP

The Board is made up of three members appointed by the Governor for six-year terms. The present Chairman, John P. Montgomery of Mt. Carmel, serves until 1957. Richard T. Cooke of Torrington serves until 1955. David C. Mahoney of West Hartford is filling the unexpired term of Dr. John E. Flaherty until 1953.

### ADVISORY COUNCIL

The Advisory Council is a group of sportsmen which serves as a liaison between the sportsmen and the department. The Council was first organized in 1932 and has functioned continuously since that time. It meets monthly with department representatives at the Hartford office or in the field. Two members from each county serve four-year terms after election to membership by the Council. Three members-at-large serve three-year terms.

The present membership is:

*Hartford County*: Philip E. Gray, Bloomfield; Philip E. Devnew, Granby.

*Litchfield County:* Lee Pasqual, New Milford; George J. Ganem, Torrington.

*Middlesex County:* William F. Petras, Middletown; William Van Vleck, Old Saybrook.

*Fairfield County:* John Kuliesh, Danbury; Howard Wilson, Norwalk.

*Tolland County:* George P. Hall, Stafford Springs; Leo Flaherty, Rockville.

*New Haven County:* Charles T. Letson, Madison; Dr. Joseph F. Quinn, New Haven.

*New London County:* Dr. Willard J. Morse, New London; Leonard Partridge, Norwich.

*Windham County:* Leon S. Robbins, Thompson; Henry Danielson, Putnam.

Members-At-Large are Arthur Bissell, Suffield; Henry J. Heiftje, Torrington; and Kenneth Little, Rockville.

Officers of the Advisory Council are: President, George P. Hall; Vice President, Philip E. Devnew; and Secretary, Roger C. Norling.

#### DIVISION OF ADMINISTRATION

During the fiscal year 1951-1952, 117,694 hunting, trapping and angling licenses were sold, an increase of 9,238 compared to the number sold during the previous year. Income amounting to \$519,089.24 represented an increase of \$47,795.59 compared to the fiscal year 1950-1951.

It will be noted in the financial statement that the cash balance of the Inland Fish Fund at the end of the fiscal year ended June 30, 1952 was \$137,604.64. At the close of business in 1951 the balance was \$70,220.64. The reasons for the great increase during the past year are: (1) Inability of commercial trout hatcheries to supply brook trout as contracted for during 1951; (2) Closing of Franklin Rearing Station, resulting in the layoff of four employees; (3) Decision of the Board to leave four vacancies unfilled in the Warden Service; and (4) An increase of approximately \$15,000.00 at the beginning of the fiscal year resulting from restrictions during the year ending June 30, 1951 and an increase in revenue from the sale of angling licenses amounting to \$30,846.00.

#### Department Income and Expenditures Fiscal Year 1951-1952

##### Means of Financing

Cash Balance Beginning of Fiscal Year:

Game Fund	\$34,499.19	
Inland Fish Fund	70,220.64	
Marine Fund	1,838.34	\$106,558.17

Receipts from sale of hunting, trapping and angling licenses and other sources:

Game Fund	
Hunting and trapping licenses	\$94,490.35
Combination hunting and angling licenses	58,249.95

## BOARD OF FISHERIES AND GAME

Combination hunting, trapping and angling licenses	8,274.00	
Pittman-Robertson reimbursement	44,382.54	
Game Breeders' licenses	1,256.00	
Permits to kill deer	5,376.00	
Permits to operate private shooting preserves	340.00	
Permits to hold dog training trials	165.00	
Fur buyers' licenses	119.00	
Taxidermist licenses	135.00	
Sale of confiscated venison	354.60	
Sale of pheasant tags	1,141.20	
Miscellaneous	80.12	
Transfers to fund	1,139.71	\$215,503.47

## Inland Fish Fund

Angling licenses	\$235,127.01	
Combination hunting and angling licenses	58,249.95	
Combination hunting, trapping and angling licenses	4,137.00	
Inland commercial fishing licenses	713.00	
Shad net registrations	865.00	
Licenses to operate commercial hatcheries	145.00	
Rental of boats	1,633.00	
Refunds of expenditures	326.50	
Miscellaneous	419.81	
Transfers to fund	469.50	\$302,085.77

## Marine Fund

Sale of Boat	\$1,500.00	\$519,089.24
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## Appropriation from General Fund

\$189,101.48

## TOTAL CASH RESOURCES

\$814,748.89

## Expenditures:

## Game Fund

Law enforcement	\$27,156.15	
Game management	20,805.25	
Pittman-Robertson projects	46,135.00	
Purchase of game	88,930.62	
Capital projects	26,446.55	
Miscellaneous	5,100.61	\$214,574.18

## Inland Fish Fund

Law enforcement	\$38,697.30	
Operation of hatcheries	96,538.15	
Purchase of fish	63,807.41	
Fisheries management	25,560.32	
Capital projects	4,900.00	
Miscellaneous	5,198.59	\$234,701.77

## General Fund

Administration	\$44,125.57	
Land and water acquisition	22,626.43	
Law enforcement	79,696.27	
Lobster restoration	16,585.57	
Capital projects	5,272.22	
Miscellaneous	7,227.87	\$175,533.93
		\$624,809.88

Balances on hand at end of fiscal year:

Game Fund	\$35,428.48	
Inland Fish Fund	137,604.64	
Marine Fund	3,338.34	
General Fund	13,567.55*	\$189,939.01

\* \$5,326.41 lapsed June 30, 1952.

\$8,241.14 continued to ensuing year.

During the fiscal year the fish and game law book was revised. The 1947 law book, 1949 supplement, and the laws relating to fish and game which were enacted by the 1951 General Assembly were combined into one publication and indexed. Fifty thousand copies were printed at a cost of \$3,865.70. Thirty thousand copies were distributed early in 1952 and the remaining copies will be mailed to town clerks in 1953 for distribution. Eighty-five thousand copies of an abstract of fishing laws and regulations were printed at a cost of \$2,152.99 and shipped to town clerks for distribution to holders of angling licenses.

The appointment of a seven-man committee to survey "the administrative organization, policies and practices" of the State Board of Fisheries and Game was announced by Governor Lodge in June.

Attorney Edmund W. O'Brien of Waterford was named by the Governor to head the survey which Governor Lodge directed "to determine the improvements possible in the functioning of an agency of such high importance to the health, recreation and well-being of our people."

Other committee members appointed by the Governor are: Bernard H. Pearson of Sharon; Theron Ludington of West Hartford; Philip Barske of Stratford; George E. Goodell of Killingly; Gordon Lamont of Darien; and Aaron Kinne of South Glastonbury.

## DIVISION OF WILDLIFE PROTECTION AND LAW ENFORCEMENT

### PERSONNEL

The authorized permanent full-time positions in this division are, one chief warden, eight state wardens, one marine warden and 26 deputy wardens. At the close of the fiscal period there were five deputy warden vacancies.

By direction of the Board part-time patrolman employment has been largely discontinued. It was felt that adequate patrol could be given all areas by the full-time enforcement staff. However, these staff members do not have sufficient time to give the amount of patrol to these areas that some landowners feel is necessary. This has resulted in the loss of considerable land that was formerly open to public hunting.

A major activity of the department is to keep open to public hunting, under regulation, as much privately controlled land as possible. Some plan for furnishing more patrol than can be given with the present staff should be worked out.

The members of this division have a regular working schedule and in addition are subject to call 24 hours a day, 7 days a week.

Our work summary shows that 34 wardens worked a total of 80,215 hours during the fiscal year. The required hours of work for this period was 63,648. These figures show the wardens worked over 16,000 hours in excess of the time required.

During the fiscal period the members of this division made a total of 239 arrests and of this number 221 or 92% were convicted. 636 warnings were issued.

*Marine Patrol:* As required by statute five deputy wardens, in addition to the one full-time marine warden, were assigned to marine patrol. The purpose of this statute is to give protection to commercial fishermen and to enforce the laws relating to marine fish and crustacea, primarily lobsters.

*Hunting and Fishing Accidents:* Connecticut's excellent record in this field continued during 1951. There was but one fatal hunting accident. During this period 6 persons were drowned while fishing. Five of these were in one boat that capsized during a squall off the Norwalk shore. During the year there were 10 non-fatal hunting accidents. The trend for several years has been more deaths in fishing accidents than in hunting accidents. It would appear that firearms safety campaigns have produced results, but the hazards of small boats on rough water need more publicity.

*Deer Kill Investigations:* During the fiscal period wardens investigated the killing of 153 deer from the following causes; 71 by automobile, 4 by train, 30 by gunshot, 15 by dogs, 11 injured, 2 from disease, 6 drowned and 14 from unassigned causes.

*Duck Blinds:* State-owned duck blinds were constructed by members of this division on state-owned land and were available to hunters on a "first-come, first-served" basis in the numbers indicated at the following locations: Barn Island, Stonington, 8; Great Island, Old Lyme, 8; Lord's Cove, Lyme, 4; Hammonasset, Madison, 5; Ragged Rock Creek, Old Saybrook, 5.

*Jacklighting for Deer:* During the last session of the General Assembly the penalty for illegally jacklighting deer was considerably increased. The maximum fine was increased from \$200 to \$500 and in addition mandatory provision was made for the suspension for one year from the date of conviction of motor vehicle operators' licenses and the forfeiture of firearms. This legislation has brought about a definite decrease in this type of violation.

## DIVISION OF GAME RESTORATION

### *Game Purchase and Distribution*

Pheasants	Cocks	Hens	Total	Cost
Fall, 1951				
During season (Department regular)	16,289	15,221	31,510	\$77,190.30
Six-weeks Program	4,630	4,508	9,138	10,504.81

## Spring, 1952

Regular spring (Department regular)	2	10	12	20.40
Six-weeks Program	21	99	120	269.16
Cooperative liberation (Department's share)	83	193	276	638.45
Special Purchase (experiments, exhibits, etc.)	4	4	8	23.40
	21,029	20,035	41,064	\$88,646.52
Cooperative raccoon liberation			50	294.50
				\$88,941.02

*Six-Weeks-Old Pheasant Program*

This cooperative program continues to be popular with sportsmen's clubs and it provides an excellent means of getting a fair number of birds into the covers at a relatively low cost to the Department.

Year	Number of cooperating clubs	Number of birds purchased and delivered to clubs	Total cost of birds purchased	Total number birds raised and liberated	Per cent raised and liberated of total number received	Total cost to department	Average cost per bird liberated
1946	23	8,238	\$11,264.20	6,728	81.7	\$11,708.70	\$1.74
1947	37	12,635	16,181.75	10,456	82.8	16,793.75	1.61
1948	32	11,435	14,136.25	9,251	80.9	11,868.25	1.61
1949	34	10,695	11,607.80	9,217	86.2	11,796.80	1.28
1950	34	11,020	10,649.45	9,545	86.6	10,734.45	1.12
1951	34	10,990	10,653.97	9,258	84.2	10,773.97	1.16

*Cooperative programs*

The largest increase in club participation is in the tree and shrub planting program. A new form of cooperative project was included this year when the Game Division provided 14 man-days of their time in the field preparation and instruction at the three-day Conservation Camp sponsored by the Litchfield County League of Sportsmen's Clubs.

The following table lists the types of cooperative programs and the numbers of clubs taking part in a program.

Programs	Number of Clubs Participating
Cooperative pheasant liberation	2
Cooperative pheasant liberation field trials	14
Winter feeding program	12
Cooperative Raccoon Liberations	3
Tree and Shrub Planting Program	32
Six-Weeks-Old Pheasant Program	32
Regulated Shooting Program	36
Grain Planting Program	3
Waterfowl Restoration	2
Cooperative Rabbit Redistribution	..
Regulated Private Shooting Preserves	9
Conservation Camp	1

### *Hunting Ground Program*

The key to continued hunting in Connecticut, is not so much dependent upon "what to hunt" as it is on "where to hunt." The private landowner's good will is absolutely necessary if a satisfactory hunting ground program is to continue in Connecticut. The Department and the sportsmen today do not have the good will of many landowners, and this is indicated by the fact that the Department's controlled hunting ground program has lost annually since 1945, approximately 5,000 acres.

Many license holders actually believe that the purchase of a hunting license not only permits the taking of game but also trespass without permission on the property of others. On land that is controlled by the Department and so posted, disrespect for the property owner's rights is even more flagrant. A forceful educational program on the subject of how a license holder should conduct himself while afield is urgently needed.

Legislation is urgently needed to divide our long hunting season into stocking periods and gunning periods to eliminate undesirable practices.

### *Game Diseases*

In October, 1951, there was an outbreak of equine encephomyelitis on three Connecticut pheasant farms. There is laboratory evidence that this disease was probably present in Connecticut pheasants in 1947. A two-year cooperative study was started in June 1952.

Some time during the late summer or early fall of 1951 rabies in the New York fox population spread eastward across the Hudson River barrier and presented a direct menace to the livestock, dog and wildlife populations of Connecticut.

New York and Pennsylvania have been concerned with the control of rabies in their wildlife populations for a number of years.

Considering the strong likelihood that rabid fox may be soon crossing our State boundaries on the west, it might be well to create a zone of fox scarcity along our New York border before the disease becomes firmly established within the State. The annual cost of such a project would be approximately \$75,000.

### *Field Trials*

The need for special areas to be used primarily for dog training and field trials has been recognized by the Department and at the present time, the following six areas have been set aside and are being developed for this purpose.

*For Bird Dogs:* Pelton's Pasture, East Windsor, State-owned; Franklin Swamp Area, Franklin, State-owned; Cook's Area, Harwinton, State-regulated.

*For Beagle Hounds:* Larson Lot, Colchester, State Forest; Mohawk Area, Cornwall, Goshen, State Forest; Middlefield-Durham Area, State-leased.

## PITTMAN-ROBERTSON PROGRAM

The program has been carried on through six development projects, one land acquisition project and one investigational project during the year.

The dike at Great Harbor, Guilford, has been transferred from the Health Department to Fisheries and Game and the present project calls for the purchase of as much as possible of the area that can be flooded there. Wherever possible enough upland is obtained so that shooting over the area can be controlled.

The investigational project continues to obtain annual estimates of the more important game species and the factors which may be affecting production. Work on the development projects is being closely followed to determine what techniques for improving game habitat are most effective and economical.

Habitat improvement, primarily to benefit cottontail rabbit, is proceeding well on three areas in the state. The cooperative project with the Forestry Department for the improvement of conditions for wildlife in and around plantation areas has been carried out on the Mesomasic State Forest, Portland, the Natchaug State Forest, Eastford, and Nipmuck State Forest, Union.

Plans for the coming year include at least one acquisition project, probably to complete the Barn Island Shooting Area.

## FISH DIVISION

From the standpoint of funds expended, the trout program is the largest enterprise of the Fish Division. Not all of our 86,261 licensed anglers are trout fishermen—in fact the best guess, based on a study made some years ago, is that only about one half are interested in catching trout. Trout fishermen tend to be members of the organized sportsmen's groups and thus are in a position to make their wishes known to the department.

Trout culture and stocking are governed by the seasons. Thus it is impossible to give a clear picture of these activities for any one calendar year by showing stocking done during the fiscal year—the period of this report. For this reason, we will summarize the stocking figures for the calendar year 1951 and, in the interest of current information, give the stocking figures for 1952 up to August 28th.

SUMMARY OF TROUT PLANTED DURING THE  
CALENDAR YEAR 1951

	No. of Trout	No. of Lbs.
Fry		
Brook trout	230,000	43
Brown trout	81,000	53
	<hr/>	<hr/>
	311,000	96

Fingerlings		
Brook trout	224,127	1,809
Brown trout	105,448	503
Rainbow trout	11,135	109
	<hr/>	
	340,710	2,421
Adults		
Brook trout—1 year	58,705	9,770
Brook trout—2 year	52,852	21,620
Brown trout—1 year	12,375	1,224
Brown trout—2 year	101,464	44,469
Rainbow trout—1 year	4,185	153
Rainbow trout—2 year	56,624	23,124
	<hr/>	
	286,205	100,360
	<hr/>	
Total	937,915	102,877

SUMMARY OF TROUT PLANTED JANUARY 1, 1952  
TO AUGUST 28, 1952

	No. of Trout	No. of Lbs.
Fry		
Brook trout	142,500	34
Brown trout	125,200	70
	<hr/>	
	267,700	104
Fingerlings		
Brook trout	53,500	232
Brown trout	53,565	311
Rainbow trout	6,735	289
	<hr/>	
	113,800	832
Adults		
Brook trout—1 year	70,008	10,376
Brook trout—2 year	25,849	9,595
Brown trout—1 year	4,062	684
Brown trout—2 year	102,665	46,408
Rainbow trout—2 year	68,100	28,896
	<hr/>	
	270,684	95,959
	<hr/>	
Total	652,184	96,895

In 1951 the department purchased 57,442 pounds of trout or 56 per cent of the total poundage stocked; in 1952, up to September 1st, 43,343 pounds or 45 per cent were purchased.

*Lobster Hatchery:* Under section 5020 of the General Statutes, \$5,000.00 is appropriated annually to this department for the purpose of buying egg-bearing lobsters from Connecticut lobstermen.

In 1952, the eggs from 2,971 egg-bearing lobsters were hatched and the brood lobsters were returned to the waters along the coast. From these females, 362,000 newly hatched fry and 974,000 fourth-stage fry were hatched and liberated. This is the largest production at the lobster hatchery since its establishment.

*Lake and Pond Management:* There are numerous and perplexing problems involved in managing Connecticut lakes and ponds. These waters are relatively small, heavily fished, and, through past stocking efforts, contain a wide variety of fishes. Each lake, due to its peculiar characteristics, will support just so many pounds of fish and the only way a lake can be made to support a greater poundage is through increasing the basic fertility of the water, which is too expensive for practical purposes on any but very small ponds.

Connecticut lakes have not been "fished out" by the present concentration of anglers. What has happened is that the heavy selective fishing for the predaceous species has lowered their numbers to the point where the pan fishes and the forage fishes are out of control and make up too large a percentage of the total poundage of fish present.

*Dingell-Johnson Program:* In the fiscal year 1951-52, the total Dingell-Johnson Fund for Connecticut was \$34,332.14; in 1952-53 the fund amounts to \$33,447.02.

Three projects are under way at the present time. One was the acquisition of land including portions of the Blackledge and Jeremy Rivers which were key pieces in the state's acquisition plan for that area. The dam at Wood Creek Pond, Norfolk, is being repaired. A small research project is being financed at the University of Connecticut which is aimed at developing field methods for evaluating the basic fertility of lakes and ponds.

*Stream Leasing:* About five and one-half additional stream-bank-miles were leased on Far Mill River, Rippowam River, Saugatuck River and Quaduck Brook. This brings the total length of stream-bank held under lease to approximately 124 miles.

*Laboratory Marine Investigations:* During the year 1951-1952 the study of the marine fishes of Southern New England waters has been continued through cooperation with the Bingham Oceanographic Laboratory, Yale University.

*Shad:* Data amassed in Connecticut on shad during the last half century and particularly since 1944, has been of great assistance to a current federal study. It is gratifying to quote from a letter received March 8, 1952 from Mr. R. A. Fredin, Federal Fishery Research Biologist, as follows:

"From our tagging study (on the Connecticut River) last spring, the 1951 fishing rate was estimated to be 57%; the total population was 178,000 shad, and the escapement was 77,000 shad. This tagging program, and catch and effort records in your office, have enabled us to back-calculate the total populations and escapement to 1935. It appears that the populations remained at a high level from 1935 to the middle 1940's but have fallen off since."

## SUGGESTIONS FOR LEGISLATION

This division has three recommendations to make regarding new fishery legislation as follows:

1. That all restrictive legislation pertaining to the taking of pan species by angling be abolished.
2. That the present law (Sec. 4940) governing removal of fish from ponds registered as "private waters" by the Board be amended so that fish can be removed from such waters by nets and, further, that such fish may be sold.
3. That legislation be enacted which, in effect, would define the question of water rights in streams.

## STATE BOARD OF FISHERIES AND GAME



*Established*—1866

*Statutory authority*—Chapter 246, General Statutes

*Administrative head*—RUSSELL P. HUNTER, Superintendent

*Deputy administrator*—ROGER C. NORLING, Executive Assistant

*Central office*—2 Wethersfield Ave., Hartford, Tel. 7-6341, Ext. 2369

*Average number of full-time employees*—80

*Expenditures fiscal year 1952-1953*—Recurring operating expenditures, \$604,394.53; Capital outlay, \$56,859.15

*Revenue collected (by funds) fiscal year 1952-1953*—Game Fund, \$229,334.98; Inland Fish Fund, \$345,161.38

*Organization structure*—Four divisions: Administration, Fish, Game, Conservation

During the period of this report the Board was composed of the following commissioners: John P. Montgomery, Mt. Carmel, Chairman; Richard T. Cooke, Torrington; and David C. Mahoney, West Hartford. An act of the 1953 General Assembly provided, however, that the terms of the members of the Board of Fisheries and Game in office on the effective date of the act shall expire on June 30, 1953; and that on or before July 1, 1953, the Governor shall appoint five members of said Board, one to serve for five years, one for four, one for three, one for two, and one for one year from July 1, 1953. On or before June 1, 1954, and annually thereafter, the Governor shall appoint one member to serve for a term of five years, from July 1, in the year of his appointment.

The Governor made the following appointments: David C. Mahoney, West Hartford, five years, Gordon Lamont, Darien, four years, Daniel Merriman, New Haven, three years, Fred K. Barbour, North Norfolk, two years, and Belton A. Copp, Old Lyme, one year. Mr. Mahoney has been elected Chairman and Mr. Copp, Vice Chairman.

In accordance with the Governor's directive of June 24, 1952, a committee of seven was appointed to survey the administrative organization, policies and practices of the Board of Fisheries and Game. This committee submitted its report to the Governor December 31, 1952. It recommended a number of statutory changes designed to provide a proper, well-balanced and forward-looking conservation program. As a result of these recommendations, the General Assembly enacted several amendments to the statutes pertaining to the Board and the Department.

Another committee, this one appointed by the Advisory Council at the

Board's suggestion, was requested to study conservation magazines published in other States and to make recommendations on the need for such a publication in Connecticut. The committee recommended that the Department publish a magazine of this type. (The Council is a group of sportsmen which meets monthly with representatives of the Department and serves as liaison between the sportsmen and the Department.)

During the year 43 acres of land were purchased for public hunting purposes at Pachaug Pond, Griswold, at a cost of \$200 and five parcels of land, consisting of 20 acres, were purchased at Great Harbor, Guilford, for \$2,885.

During 1952 all types of sportsmen's licenses increased. Hunting licenses numbered 24,793, a gain of 956 over 1951. Fees totaled \$98,784. Fishing licenses brought in \$235,760 as the number rose by 6,281 to 64,610. Combination licenses climbed to 30,532, up 2,600, with the revenue amounting to \$130,175.

### Division of Conservation

The field personnel of this division carries out the following duties: liberating birds, winter bird feeding program, trapping birds and quadrupeds, attendance at field trials, miscellaneous game work, liberating fish, stream and pond work, surveys for Fish and Game Divisions, obtaining leases and agreements, posting, gathering and liberating egg lobsters, special assignments, care of equipment, administrative and office, law enforcement. The latter resulted in 287 arrests with 279, or 97%, resulting in convictions. In addition 982 warnings were issued.

One fatal and ten non-fatal hunting accidents occurred during the year while five were drowned in fishing accidents. In the last five years, 30 have died in fishing mishaps and ten have been killed while hunting.

During the year wardens investigated the killing of 171 deer from the following causes: automobile 87, gunshot 44, dogs 14, accidents 10, mowing machine 2, train 2, drowned 1, snare 1, unknown 10.

Eight men attended a two-day refresher course, on the instructor level, in first aid. They in turn instructed personnel in the eight districts. All personnel of the division are qualified to render first aid.

The Department had an exhibit in the Connecticut Building, during the eight-day period of the Eastern States Exposition, which was staffed by this division.

During the period July 1 to September 15, six men were assigned to marine patrol. During this period their normal inland duties were absorbed by other personnel of the division.

Members of this division participated in the following projects: Built new dock at Cream Hill Pond, Cornwall; assisted Fish Division in replanking dock at lobster hatchery, Noank; built a new fish screen at the outlet of Ball Pond, New Fairfield; repaired fish screen at outlet of Taunton Pond, Newtown; built and set out 50 wood duck nesting boxes; planted several thousand multiflora rose bushes and seedling conifers.

### Division of Game

Pheasant purchases in 1952 were reduced to 75% of the 1951 program. This reduction in the pheasant program provides funds for waterfowl work, habitat improvement work for other game species and the purchase of game lands.

## GAME PURCHASE AND DISTRIBUTION

Pheasants		Cocks	Hens	Total	Cost
Fall 1952					
	During Season (Dept. Regular)	11,119	10,743	21,862	\$52,659.35
	Six-Week Program	4,619	4,108	8,727	9,873.23
Spring 1953					
	Spring (Dept. Regular)	278	1,561	1,839	3,579.62
	Six-Week Program	20	83	103	222.92
	Cooperative Liberation, Dept. Share	56	110	166	323.03
		16,092	16,605	32,697	\$66,658.15
Cooperative Raccoon Liberation					339.82
					\$66,997.97

*Six Week Old Pheasant Program.* The Department is making an effort to improve the quality of the birds raised under this program. To reduce the degree of pheasant gape-worm infection in the 52 pens maintained by the sportsmen clubs, a soil vermicide, chlorodane, is being used with some success. Debeaking the young pheasants prior to their distribution to club pens and again during the rearing season as conditions warrant is being undertaken to reduce feather picking in these flocks.

Year	Number of Cooperating Clubs	Number of birds purchased and delivered to clubs	Total cost of birds purchased	Total number birds raised and liberated	Percent raised and liberated of total number received	Total cost to Dept.	Average cost per bird liberated
1948	32	11,435	\$14,136.25	9,251	80.9	\$11,868.25	\$1.61
1949	34	10,695	11,607.80	9,217	86.2	11,796.80	1.28
1950	34	11,020	10,649.45	9,545	86.6	10,734.45	1.12
1951	34	10,990	10,653.97	9,258	84.2	10,773.97	1.16
1952	33	10,400	9,993.15	8,830	84.9	10,096.15	1.14

*Cooperative Programs.* Sportsmen's Club participation in cooperative game programs continues to increase. Cooperative pheasant liberations, tree and shrub planting, and waterfowl projects show the most gains. With the distribution of 3,000 *Cooperative Game Program* pamphlets even some landowners are using the information as an aid to improving their lands for wildlife.

## PROGRAMS 1952-1953

	Number of Clubs Participating
Cooperative pheasant liberation	10
Cooperative pheasant liberation field trials	12
Winter feeding program	10
Cooperative raccoon liberation	3
Tree and shrub planting program	38
Six-weeks-old pheasant program	33
Regulated shooting program	35
Grain planting program	2
Waterfowl restoration	5
Cooperative rabbit redistribution	—
Regulated private shooting preserve	5
Conservation camp	—
	153

*Game Diseases.* In anticipation that rabies, known to be present in the New York wildlife population, may eventually find its way to Connecticut, 42 diseased

foxes and 18 raccoons were submitted to the Animal Disease Laboratory at the University of Connecticut and Public Health Laboratory for study, and found negative to rabies. It has been noted as a result of these studies that foxes suffer losses from three disease conditions, mange, caused from infestation of skin mites, infectious hepatitis (fox encephalitis), and canine distemper. The raccoons suffer from a number of internal parasites and a disease known as para-distemper variously called hard pad disease or McIntyre's encephalitis which is common in dogs. To our knowledge there was no outbreak of equine encephomyelitis in Connecticut pheasant farms during 1952. The study of this disease is continuing.

*Miscellaneous Game Projects.* During the spring of 1953 with the aid of the Department's conservation officers, the following was accomplished: Some 17,000 trees and shrubs were planted on ten state-owned properties. Stock used consisted of multiflora rose, evergreen trees and some food shrubs. Fifty-three wood duck nesting boxes were constructed and erected. Nineteen of these were reported used in the spring of 1953 by wood ducks. A survey was completed of the occurrence and spread of eelgrass *Zosteria*, a waterfowl food plant, along the Connecticut shoreline. The condition of eelgrass beds in the Sound east of the Connecticut River continues to improve, whereas areas west of the river show little improvement.

An analysis of game and fur breeder reports reveals that during 1952, 264 breeders raised over 90,000 pheasants. Of these, some 63,000 were sold for liberation and 12,000 for food. Ninety-seven mink breeders raised approximately 36,000 animals and pelted over 22,000.

Field trials for hunting dogs continued to be popular among sportsmen groups. These included 19 fox and coon dog trials, 23 bird dog trials, 10 beagle dog trials, 69 bird dog trials at which birds may be shot. In the latter type, 2,102 pheasants were liberated, 1,129 birds were shot and 973 birds escaped.

Hunting lands under the Department's control totaled 310,686 acres during the 1952 season and were as follows: 38 regulated shooting areas, 124,575 acres; 11 state-leased shooting areas, 66,650; 10 department-owned shooting areas, 3,067; 23 State Forest, 114,394; one military reservation, 2,000.

#### **Pittman-Robertson Program**

The allotment of federal funds for 1952-1953 was \$50,125.53, a decrease of nearly \$26,000 from the preceding year. All of the investigational work is combined in one project, W-7-R Wildlife Survey and Management Study. The more important work under this project may be grouped as follows: population trends and kill estimates for all game and furbearer species, as a guide to regulations, bag limits and need for restoration of habitat; analysis of license stubs shows changes in the take of all species, cottontail abundance figures on three sample areas; squirrel leaf nest counts along 634 miles of roads; grouse flushing censuses on 37.5 miles of line on six sample areas; roadside counts of singing woodcock on 17 sample areas, of quail along 60 miles of road; estimates of waterfowl production by brood counts on 40 sample areas, and 1,288 miles of aerial transect; evaluation of the work on development projects; studies of the factors influencing the use of a stream by furbearers; a plan for management of furbearers on state-owned lands; the movements and feeding behavior of scaup ducks in the Sound; land-use mapping of the non-urban towns; analysis of weather data and recommendations on game management and related matters.

Development work has been carried on under six projects, one of them in cooperation with the Park and Forest Commission. The latter has resulted in

improved conditions for game on about 250 acres of plantation and adjacent hardwoods in five state forests. Development work, to test the techniques for providing a cottontail population large enough for beagle trials, has been completed on the 265 acre Larson Lot. A more extensive project is underway on the Mohawk and Tunxis state forests where 350 acres are being improved for game by bulldozing and planting. Work is underway at Pelton's Pasture that is expected to improve the area for hunting and field trials. Final acceptance of the dike and water control structure, flooding about 120 acres for waterfowl and waterbearers, at Charter Marsh came during this year.

Land purchase expenditures have all been in the Barn Island area and have increased the state ownership there about 469 acres.

### Division of Fish

*Trout Program.* In recent years the magnitude of the trout program was determined by the funds available. This year the Board put a ceiling of 100,000 pounds on the trout to be stocked for the 1953 season, with the long-term objective of a general rebalancing of the fish program to place more emphasis on warm-water fish management. The trout stocking figures are given for the last calendar year and for the current calendar year to June 30. Since most of the trout are stocked in the spring, this method gives a good idea of the stocking done for the current year's fishing season.

#### SUMMARY OF TROUT PLANTED

Calendar Year 1952

Fry	No. of Trout	No. of Lbs.	January 1 to June 30	
			No. of Trout	No. of Lbs.
Brook Trout	142,500	34	92,000	19
Brown Trout	125,200	70	130,800	71
	<hr/> 267,700	<hr/> 104	<hr/> 222,800	<hr/> 90
<b>Fingerlings</b>				
Brook Trout	66,800	408	85,261	225
Brown Trout	102,805	775	8,435	495
Rainbow Trout	18,991	401	11,635	491
	<hr/> 188,596	<hr/> 1,584	<hr/> 105,331	<hr/> 1,211
<b>Adults</b>				
Brook Trout—1 yr.	70,008	10,376	77,018	12,022
Brook Trout—2 yr.	25,849	9,595	44,871	17,656
Brown Trout—1 yr.	4,062	684	3,660	473
Brown Trout—2 yr.	102,665	46,408	101,482	42,311
Rainbow Trout—1 yr.			1,500	109
Rainbow Trout—2 yr.	68,100	28,896	63,743	30,326
	<hr/> 270,684	<hr/> 95,959	<hr/> 292,274	<hr/> 102,897
Total of All Trout Planted	726,980	97,647	620,405	104,198

*New Equipment and Facilities.* A new raceway was constructed at Burlington which has a capacity of at least 10,000 yearling trout, two small unused rearing ponds at Farmington were put back into repair and stocked with 20,000 fingerling brown trout. The rearing station at Voluntown was put back into operation and this spring yielded 10,921 yearling brook trout and 9,890 yearling brown trout. Other stock is purchased.

### Why Emphasis was Shifted

The committee appointed by the Governor to study this Department analyzed the cost of stocking trout and arrived at the figure of \$1.82 as the total cost of stocking a pound of trout in fishing waters. Since the anglers recover only about 50% of these trout, the cost to the sportsman of creeling a pound of trout is over \$3. In this fiscal period there were 101,799 persons licensed to fish. The Department stocked 102,897 pounds of legal-size trout for the 1953 season. This gave a theoretical share of just over one pound of trout per angler. But only about half the legal-size trout stocked are liable to be caught, so a closer approximation of the share of each angler is one-half pound of trout. The legal-size trout weighed better than one-third of a pound each, so per-angler share was less than two fish.

The best information indicates that only about one-half of the license holders fish for trout while the remainder depend upon warm-water species in lakes and ponds for their sport. These are the considerations which prompted the Board to level off the trout-stocking program and to take steps which, it is believed, will eventually improve lake and pond fishing.

*Warm-water Fish Program.* A warm-water program involves long-term planning. In this climate it takes five or six years to produce a sizable specimen of warm-water game fish and six to ten years for a sound management program to work a noticeable improvement in fishing in a lake which has been thrown out of balance by improper stocking or catch regulations.

Lakes and ponds vary tremendously in their chemical, physical, and biological characteristics. For this reason each must be studied and managed as an individual problem. This year a survey crew composed of biologists and some temporary assistants has been working on lakes and ponds in the Litchfield and Hartford areas. The survey will result in a work plan for each and will continue each summer until all of the State's impoundments have been inventoried. The specific findings and recommendations will be made available to the public in published form.

There is need in a warm-water fish program for a reliable supply of certain species, particularly black bass and chain pickerel. Last fall a state-owned pond at Farmington was reclaimed for rearing and stocked with largemouth bass brood stock. Plans are underway for the reclamation of Darling Pond, Chaplin, and six ponds at the Kensington hatchery for rearing warm-water fishes.

*Children's Ponds.* Connecticut, it is believed, was the first State to set aside waters for the exclusive use of children under 16 years of age. This program has expanded until now there are 28 ponds. These ponds are given an annual stocking of warm-water pan and game fish. In 1952, they were stocked with 25,981 adult and fingerling fish and with 10,281 in the first half of 1953.

*Lobster Work.* By statute, \$5,000 annually is appropriated for the purchase and liberation of egg-bearing lobsters taken by lobstermen. This year 5,411 lobsters were purchased. Of these 1,864 were taken into the hatchery and from them 660,000 fourth-stage and 6,000 third-stage fry were produced.

*Dingell-Johnson Program.* The 1952-53 federal aid fund amounted to \$33,447.02; the 1953-54 allotment will be \$42,999.16. Three projects have been completed to date. Key parcels of land, including portions of the Blackledge and Jeremy Rivers, were purchased. The dam at Wood Creek Pond, Norfolk, was rebuilt. Two projects are now in progress. The lake and pond survey mentioned previously is financed out of federal aid funds. A project to acquire per-

manent fishing easements, together with necessary access points and parking areas, on the Hockanum River is making progress.

*Shad.* Information at hand suggests that the shad run was as large, if not larger, than last year. However, adverse netting conditions in the Connecticut River kept the catch low for many fishermen. Shad anglers at the Enfield dam had an excellent year. Information compiled at the state-regulated area at the west end of the dam show that 5,046 anglers caught 5,337 shad.

*Laboratory Marine Investigations.* During 1952-1953 the study of the marine fishes of Southern New England waters was continued through cooperation with the Bingham Oceanographic Laboratory, Yale University. This year the major piece of research undertaken has been an oceanographic survey of the central and eastern parts of Long Island Sound.



## STATE BOARD OF FISHERIES AND GAME



*Established*—1866

*Statutory authority*—Chapter 246, General Statutes

*Administrative head*—LYLE M. THORPE, Superintendent

*Central office*—2 Wethersfield Ave., Hartford, Tel. Jackson 7-6341, Ext. 2369

*Average number of full-time employees*—76

*Expenditures fiscal year 1953-1954*—Recurring operating expenditures, \$649,200.81; Capital outlay, \$42,304.34

*Revenue collected, by funds, 1953-1954*—Game Fund, \$233,083.54; Inland Fish Fund, \$359,160.51

*Organization structure*—Four divisions: Administration, Fish, Game, Conservation

The period of this report was a time of re-appraisal of past programs, a time of planning, a time of great labor to comply with a mandate from the legislature.

It was a time of profound change in the thinking, organization, budgeting, and planning of the Department, and the changes were made by men driven by the conviction that time was running out for public hunting and fishing in this state unless there could be devised some new approach by the state to our unique problems, and also an awakening of citizen responsibility toward the perpetuation of their wildlife resources.

The last General Assembly enacted legislation which abolished the three-man Commission and established a five-man Board. This legislation defined the duties and responsibilities of the Board as a policy-making body, and concurrent legislation spelled out the function, authority and qualifications of the Superintendent as the administrative head of the Department. The legislature passed measures which delegate to the Department increased authority to regulate hunting and fishing and to manage funds derived from the sale of hunting and fishing licenses. The "wardens" were re-titled "conservation officers," and the implication is clear that the function of this field force was to be changed in keeping with the title. The Department was directed to prepare a long-range program as well as a short-range program for the consideration of the next General Assembly. The instructions implicit in the measures passed by the legislature were to de-emphasize put-and-take stocking of trout and pheasants and law enforcement, and to broaden and balance the Department's program in the direction of management and conservation.

The new Board of Commissioners appointed by the Governor, which took office on July 1, 1953, was made up of David C. Mahoney, West Hartford; Gordon Lamont, Darien; Daniel Merriman, New Haven; Fred K. Barbour, North Norfolk; and Belton Copp, Old Lyme. Mr. Mahoney was elected by the other

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## STATE BOARD OF FISHERIES AND GAME

Commissioners to the chairmanship, and Mr. Copp to the vice-chairmanship for one year. Mr. Copp, whose original appointment was for a one-year term, was reappointed in June to serve an additional five-year term. On February 28, 1954, Superintendent Russell P. Hunter resigned to become a member of the University of Connecticut faculty, and Lyle M. Thorpe, who had been head of the Fish Division, was appointed Superintendent by the Board.

An Advisory Council consisting of two members from each of the eight counties acts in an advisory capacity to the Board in the promotion of better hunting and fishing in Connecticut in conjunction with the conservation and perpetuation of all wildlife. Since its origin, the Advisory Council has been a self-perpetuating group. Members were nominated for appointment by those whose terms were about to expire. On June 30, 1954, the by-laws were revised so that future appointments to fill vacancies would be made by the Board and nominations may be submitted by the Advisory Council, any organized sportsmen's, farm, or conservation group, or by a group of not less than five legal voters.

A new wildlife conservation program for the state was prepared by the Superintendent, approved by the Board and released by the Governor in May. Printed copies are available upon request to the Department. This program follows the new legislative directive as to budget and organization of personnel. Under it, trout and pheasant stocking is stabilized at the approximate level of recent years. Funds are assigned to do habitat improvement work for forest game, farm game, waterfowl, warm-water game fish, and trout. A unique field force is created on a district basis which has within itself all of the skills necessary to do practical wildlife conservation work, or to guide volunteer or paid labor doing such work. This field force is composed of the present conservation officers augmented by trained fish and game biologists. The lines of administrative control of this field force lead directly to the Superintendent in order to give flexibility and eliminate delay and red tape in bringing resources of men, money, and equipment to bear on work projects. This program represents a reorganization of a state department, and this could not be accomplished without the help and approval of those outside the Department. In this reorganization the Governor, members of the legislature, the Commissioner of Finance and Control together with the Director of the State Budget and the State Personnel Director, the Park and Forest Commission, the newspapers of the state, and the sportsmen all gave aid and encouragement.

### Business Administration

During the fiscal year, total hunting, trapping and angling licenses increased to 132,270, a gain of 5,646. Total receipts from the sale of these licenses amounted to \$513,170, an increase of \$20,771. Other income included \$14,159 from the sale of commercial licenses and miscellaneous receipts, and \$64,915 from the federal government, representing 75% reimbursement on fish and game projects under the Pittman-Robertson and Dingell-Johnson Acts. An appropriation of \$205,109 from the General Fund supplemented the Department's income.

Plans have been completed for the installation of a more complete system of accounting for field activities under the new program. An activity record form for use by all field employees was put into use so that better cost accounting could be done on the various activities of the Department.

STATE BOARD OF FISHERIES AND GAME

Game Program

In accordance with the new over-all conservation projects proposed under the reorganized plan of the Department, the pheasant purchase program will level off during the next few years to an expenditure of around \$70,000. However, some increase in the numbers of pheasants to be liberated can be expected as the Prison Farm and six-week-old pheasant programs are expanded.

PHEASANTS LIBERATED

	Cocks	Hens	Total	Cost
Fall 1953				
During Season (Dept. Regular)	11,383	10,891	22,274	\$53,546.05
Six Week Program	4,945	4,856	9,801	10,974.53
Post Season	137	685	822	2,005.30
Spring 1954				
Spring (Dept. Regular)	392	2,231	2,623	4,645.75
Six Week Program	21	156	177	338.40
Cooperative Liberation, Dept. Share	46	218	264	526.25
	<hr/>	<hr/>	<hr/>	<hr/>
	16,924	19,037	35,961	\$72,036.28

The funds expended for the purchase of pheasants during 1953-1954 increased approximately \$5,000 over the previous fiscal period. The average cost of pheasants released during the period was \$2.00 or a savings of \$.05 per bird over the previous year.

**Prison Farm.** The Prison Farm at Enfield, following a legislative directive, built a modern (6,000 bird) pheasant rearing unit during the spring of 1954. Pheasants raised this summer will be transferred to the Department at cost for liberation during the fall of 1954. It is hoped that this program and the six-week old program with sportsmen's clubs will materially reduce the average cost of birds liberated in the future.

**Six-Week-Old Pheasant Program.** This program continues to expand. Eight more clubs, making a total of 41, took part in the 1953 cooperative rearing program. The control of pheasant gapeworm parasite continues to be a problem. Actual bird losses from these parasites are negligible. However, birds infected with this parasite are slow in development and are more prone to injury from feather picking. Studies recently completed at the University of Connecticut, outline the use of specific chemicals for the control of this parasite. However, the labor cost for applying these chemicals is high and volunteer club labor is limited. Considerable has been learned during the year about the spread and control of eastern equine encephalomyelitis in pheasant flocks. This knowledge results from cooperative studies with the Animal Disease Laboratory at the University of Connecticut.

**Cooperative Programs.** The number of sportsmen's clubs participating in cooperative game projects steadily increases. The clubs take the greatest interest in the tree and shrub planting, cooperative pheasant rearing, and regulated shooting programs. Waterfowl restoration projects are becoming of more interest to sportsmen's groups. President Eisenhower's request to the Boy Scouts of America, that more active interest be shown on their part in the conservation of our natural resources, has already provided some scout participation in a number of game projects.

## STATE BOARD OF FISHERIES AND GAME

Cooperative Programs 1953-1954	Number of Clubs Participating
Cooperative pheasant liberation	9
Cooperative pheasant liberation field trials	12
Winter feeding program	11
Cooperative raccoon liberation	2
Tree and shrub planting program	45
Six-week-old pheasant program	41
Regulated shooting program	38
Grain planting program	1
Waterfowl restoration	7

**New Program.** Some progress can be reported on the new program of the department as follows: Planning and construction is underway for the establishment of mallard rearing on state-owned property in Franklin. One hundred wood duck nesting boxes were constructed and erected in the more suitable waterfowl areas. A survey late in June indicated that nearly one-half of these boxes had been used by wood duck. The result was an estimated 700 ducklings. Field work was completed this spring on a study of the wintering habits of scaup duck in Long Island Sound. This was a cooperative study with the Forestry and Wildlife Department of the University of Connecticut. Land purchase expenditures have added about 86 acres, containing an additional impoundment site, to state ownership at Barn Island, Stonington. Late in the fiscal period, a land acquisition program was initiated at Nell's Island, Milford. Improved conditions for waterfowl and muskrat at Durham Meadows were created by providing additional water area through ditching.

**Forest Game Program.** Two cooperative field studies were completed by the University of Connecticut, which will aid the Department in the better administration of the fur resources on state-owned lands.

Cooperative arrangements with the Park and Forest Commission were in force during the year whereby forestry crews, financed by Game Funds, carried on thinnings of some of the larger pine plantations in state forests. Similar arrangements will be possible in the future for such forest game management work as creating openings, planting of coniferous cover, and the release of wild-life food plants through selective cutting.

Intensive work consisting of the bulldozing of openings in woodland, followed by fertilizing and planting of food and cover plants, has been nearly completed on 350 acres in the Mohawk and Tunxis state forests. Food and cover were also improved through selective cuttings and the use of herbicides. Eight habitat improvement projects were completed by the conservation officers during the winter.

### Fish Program

**Trout Program.** The plans of the Department call for stabilization of the trout stocking program at approximately 100,000 pounds per year. This will consist of about 12,000 pounds of yearling brook trout and about 15,000 pounds of two-year brook trout with the balance of the poundage consisting of two-year-old rainbow and brown trout. Rainbow trout stocking will be replaced by brown trout in three years. This plan has been followed as closely as is possible with such an unpredictable product as cultured trout.

## STATE BOARD OF FISHERIES AND GAME

## SUMMARY OF TROUT PLANTED

Adults	Calendar Year 1953		Jan. 1-June 30, 1954	
	No. Trout	No. Lbs.	No. Trout	No. Lbs.
Brook Trout—1 yr.	77,018	12,022	68,541	9,488
Brook Trout—2 yr.	44,871	17,656	51,100	18,504
Brown Trout—1 yr.	3,660	473	14,903	2,270
Brown Trout—2 yr.	101,482	42,311	122,334	52,431
Rain. Trout—1 yr.	1,500	109	26,115	2,767
Rain. Trout—2 yr.	63,743	30,326	45,440	21,497
	292,274	102,897	328,433	106,957

Fry and fingerling trout are a by-product of the culture of legal sized trout. An excess of eggs is cheap insurance against the possibility of heavy losses sometimes experienced during the delicate fry and fingerling stages. Some streams are capable of rearing fingerling trout, particularly brown trout, to catchable size, and fingerling stocking is concentrated in these streams. Fingerling trout do well in many small ponds if no warm water species are present. A program of rehabilitation of such ponds followed by stocking with trout fingerlings is under way.

Following are tables of fry and fingerling stocked in the calendar year 1953 and the last half of the fiscal year:

	Calendar Year 1953		Jan. 1-June 30, 1954.	
	No. Trout	No. Lbs.	No. Trout	No. Lbs.
Fry				
Brook Trout	92,000	19	202,240	42
Brown Trout	130,800	71	260,000	79
	222,800	90	462,240	121
Fingerlings				
Brook Trout	100,081	1,027	14,885	1,356
Brown Trout	92,090	1,094	84,760	808
Rainbow Trout	26,158	627	8,555	691
	218,329	2,748	108,200	2,855

**Sale of Fingerling Trout.** During the past fiscal period, the Board adopted a policy whereby fingerling trout were made available for purchase and stocking by owners of farm ponds. The fingerling program has been popular with the owners, since they are enabled to test the success of trout stocking at a reasonable cost. The Department has also profited, because the program was carefully planned to furnish data on the success of fingerling stocking in a wide variety of small ponds. This program has also improved public relations with rural property owners. A total of 21,850 (10,150 brooks, 5,925 browns, and 5,775 rainbows) were distributed to 41 pond owners.

**Trout Stocking in Ponds.** The numbers of trout stocked in lakes of the state has been increasing during recent years. This increase now represents an important proportion of the total adult trout planted, and is due to the fact that streams have deteriorated through damming and the mileage of streams open to fishing has decreased due to posting. These factors, coupled with increased fishing pressure, have necessitated greater use of lakes and ponds in the trout program.

A project to evaluate and if possible improve the success of trout stocking in lakes was initiated. Wononscopomuc Lake, Salisbury, was chosen as the best

## STATE BOARD OF FISHERIES AND GAME

site for this test, which will be carried on for three consecutive years. Preliminary analysis of data already received indicates that a revision of the past stocking policy will be expedient.

**Warm Water Fish Program.** A warm water fish program should be designed to improve fishing by every available means in the lakes and ponds of the state. The steps necessary for this accomplishment are, a fishery survey of each lake and pond, and then application of those corrective measures which the survey indicates will produce the most satisfactory fishing in each.

**Pond Survey.** During 1953-1954, the Pond Survey Unit completed work in Litchfield and Hartford Districts. Survey field work was started in June, 1954, on the lakes and ponds of Fairfield District. Plans have been made to complete the survey of the impounded waters of the Fairfield, New Haven, and Middlesex Districts during the summer of 1954.

**Warm Water Fish Culture.** Three, of a system of six ponds which will be used in rearing largemouth bass fingerlings, have been renovated at the Kensington Station. Considerable progress has also been made in preparing Darling Pond, Chaplin, for the production of pickerel fingerlings. Stocking will be limited to those lakes and ponds where the necessity has been indicated by a survey.

**Shad.** The report during a specific fiscal period cannot include the commercial catch of shad made during the period. In 1953, commercial shad fishermen reported to the Board of Fisheries and Game that 116,177 shad (49,461 bucks, and 66,716 roes) were taken. A minimum estimate, made by the Department, of the wholesale value of this catch was \$57,000. It is difficult to judge the final retail value of the 1953 catch, but it is probably nearly triple this amount.

During the 1954 commercial shad season, the Connecticut River was much higher than normal. High river levels generally result in a low catch, because shad are able to move upstream under the nets without being caught. Reports, although not complete for 1954, indicate that the total catch, as well as the catch per net, will be lower than that of 1953. The low commercial catch was also accompanied by a reduction in the catch-per-hour by anglers.

**Lobster Work.** The purchase of egg-bearing lobsters during the year has been limited by the small supply captured and offered by the commercial lobstermen. By statute, \$5,000 annually is appropriated for the purchase and liberation of egg-bearing lobsters taken by lobstermen. This year, 4,547 lobsters were purchased. Of these, 1,157 ripe egg-bearers were taken into the hatchery, and from them, 214,650 fourth-stage and 900 third-stage fry were produced. A study aimed at evaluating the effectiveness of lobster culture and release is in progress.

### Law Enforcement and Field Services

Effective July 1, 1953, the titles of personnel of this division were changed by statute from "wardens" to "conservation officers" since these men perform or assist in many wildlife conservation projects briefly described elsewhere in this report. There were three vacancies in the division at the beginning of the fiscal period. Only one of these vacancies will be filled. The former complement of 36 full-time law enforcement officers will be reduced to a total of 29. Reduction of conservation officer personnel is necessitated by over-all reorganization of the Department, in line with the legislative mandate that it drastically modify organization, policies and procedures.

All personnel of the division attended a three-day refresher course on

## STATE BOARD OF FISHERIES AND GAME

changes in fish and game laws, regulations, general procedures and law enforcement.

By authority of a special act of the legislature, five special constables were appointed by the Town of Glastonbury with authority to enforce all laws and regulations relating to fish and game. These men were given a course of training by this Department. They have cooperated fully in performing their duties. Similar authority should be granted all other towns.

Conservation officers are now devoting more of their time to wildlife management projects. For many years, about 50% of their time has been devoted to law enforcement and the balance to other responsibilities of the division. The new conservation program of the Department with emphasis on habitat improvement and more productive management practices, will result in less time being devoted to law enforcement by conservation officers, but this slack will be taken up by deputizing all field biologists to assist in law enforcement work, and by requesting the next session of the General Assembly to authorize all towns to appoint volunteer constables for fish and game protection. Time spent on law enforcement during the year was reduced to 35.9%. There were 313 arrests made, with 290 or 93% resulting in convictions, and 656 warnings issued.

Following are some of the other duties performed and the hours spent on these activities: liberating birds, 3,694; feeding birds, 1,453; trapping birds and quadrupeds, 161; field trials, 536; miscellaneous game work, 5,478; hunting check data, 2,387; distributing fish, 4,312; stream and pond work, 341; miscellaneous fish work, 702; fishing check data, 3,870; surveys, 348; leasing, 689; posting, 1,257; marine work, 1,416; exhibits, 951; and public relations, 678.

During calendar 1953, there were two fatal hunting accidents and two children were drowned while fishing. Twelve persons were injured in hunting accidents.

During the year the division investigated the killing of 200 deer, and reported death as being caused as follows: motor vehicle, 98; dogs, 18; train, three; drowned, two; accidental injuries, ten; gunshot, 56; unknown, 13.

Conservation officers picked up and assisted in debeaking 11,730 six-week-old pheasants from game breeders and delivered them to the pens of cooperating clubs. The birds and facilities were frequently inspected and the birds finally released in cover open to public hunting.

The pheasants and facilities of all game breeders holding contracts to furnish birds to the state were inspected frequently by conservation officers who checked for presence of disease and general requirements under contract specifications. Birds failing to meet department standards were rejected.

The Department had an exhibit in the Connecticut Building during the eight-day period of the Eastern States Exposition which was staffed by this division and required 951 man-hours.

The division built 46 duck hunting blinds for public use on state-owned property.

Through arrangements with the State Highway Department, considerable money has been saved by making available to this Department discarded directional signs which are being used for poster work. This greatly reduces the amount of new lumber needed for this purpose.



# STATE BOARD OF FISHERIES AND GAME



*Administrative head*—Lyle M. Thorpe, Director

*Deputy administrator*—Thomas E. Rose, Assistant Director

*Established*—1866. *Statutory authority*—Chapter 246, General Statutes

*Central office*—2 Wethersfield Ave., Hartford, Tel. JACKSON 7-6341,  
Ext. 2369

*Average number of full-time employees*—82

*Expenditures fiscal year 1954-1955*—Recurring operating expenditures,  
\$684,319.37; *Capital outlay*—\$89,450.74

*Organization structure*—Six divisions: Administration, Fish, Game, Law  
Enforcement, Conservation Education, and Land Acquisition

During the period of this report, the Board of Fisheries and Game was perfecting a unique organization of field men which had within itself all of the skills necessary to do practical wildlife management and law enforcement. Reorganization of staff, assignment to new duties and training of personnel in these duties; creation of a new Division of Land and Water Acquisition to bring order into the Board's real estate affairs; and a new service of conservation education to teach people how to live with the land so that future generations might still have wildlife to use and to enjoy, were the year's highlights. Before the General Assembly was placed the most ambitious legislative program in the history of the Department, a program that completely revised the existing laws governing hunting, trapping, and sport fishing, and gave the Department regulatory authority to control the harvest of all the wildlife species involved and to govern the conduct of sportsmen afield. To make reorganization complete, the Department requested the Budget Division to make a management study of it in an attempt to bring increased efficiency into its administration.

As the Department is engaged in a business somewhat like farming, where a delay of only a few days sometimes means the loss of a year's time, it scarcely took time to evaluate its progress, but, in preparing this report, and reviewing the record, it was found that important progress had been made. The Department is definitely on schedule with the timetable which was set up in the new program which it published in May, 1954. Of great added satisfaction is the belief that the public which it serves has confidence in the Department and faith that its program is right for the state.

The progress is due not entirely to the efforts of the Department alone, as many other people made important contributions. The General Assembly, and particularly the members of the Fish and Game Committee, the Appropriations

Committee, and the Finance Committee dealt with the problems of the Department in a completely non-partisan and constructive manner.

### Legislative Action

The 1955 General Assembly passed laws giving the Department full regulatory authority over small game hunting, sport fishing, trapping, and sportsmen's conduct while afield. This indicates recognition that the wildlife resources of the state can be managed for maximum benefit to the people only if the agency responsible for this management is permitted to use the training and experience of its personnel in deciding what are the best procedures to follow.

The legislature passed a joint resolution providing that the Governor appoint a committee to study the possibility and the conditions under which the water supply reservoirs and their watersheds might be used for public recreation.

Failure to gain a game-animal status for deer and non-passage of the Department-sponsored Fish and Game Constable bill, patterned after the statute which creates such a force of volunteer enforcement men in Glastonbury, were the only important setbacks in the Department's legislative program.

### Reorganization of Personnel

Toward the end of this period the reorganization of personnel was completed. Probably the most significant change was the creation and staffing of the field force. This group is composed of 36 men organized on a four-district basis. Each district has a district supervisor, six conservation officers, one game biologist, and one fishery biologist. The composition and organization of this field force has certain unique advantages for a state like Connecticut where the need for recreation puts heavy demands on wildlife and makes intensive management a necessity. This group has within itself all of the skills needed for practical fish and game management, and it is equipped and financed so that it can operate with a minimum of delay and red tape.

The field force translates the management plans of the Department into action, and much of the work which is reported later in the fish and game programs is done by these men. The following summation of the way their time was spent illustrates the breadth of this activity:

#### HOURS OF LABOR SPENT BY THE FIELD FORCE ON VARIOUS PROJECTS

Fiscal Year 1954-1955

##### Management and Development Projects

Waterfowl	10,835 hrs.	14%
Forest Game	5,257 "	6%
Farm Game	2,866 "	3%
General Game	3,237 "	4%
Trout	1,303 "	1%
Warm Water Fish	2,620 "	3%
Marine Fish	262 "	—
Capital Projects	346 "	—
Law Enforcement	20,036 "	24%
Stocking Fish and Game	7,614 "	9%
Leasing Land and Water	570 "	—
Public Relations	2,030 "	2%
Administration and Office Work	13,272 "	17%
Posting and Maintenance of State controlled Property	9,440 "	12%
General Services	4,479 "	5%
	84,167 "	100%

### Fish Program

**Trout.** The Department's plan for the 1955 trout stocking called for the planting of about 100,000 pounds of "keeper" trout. This poundage was to consist of about 12,000 pounds or about 80,000 yearling brook trout, 15,000 pounds or 40,000 two-year-old brook trout, 75,000 pounds or 140,000 two-year-old brown trout. Rainbow trout stocking was to be eliminated. Prior commitments for stocking, however, combined with low cost on the open market this year, influenced the Board to modify the plan and to stock some rainbows. The final figures for trout stocking appear in table form below:

#### TOTAL TROUT PLANTED JULY 1, 1954—JUNE 30, 1955

	No. of Trout	No. of Lbs.
Brook trout adults	142,291	34,974
Brown trout adults	162,169	67,899
Rainbow trout adults	36,386	13,767
Total adults	340,846	116,640
Brook trout fry and fingerlings	252,201	397
Brown trout fry and fingerlings	237,000	387
Rainbow fry and fingerlings	2,140	62
Total fry and fingerlings	491,341	846
Total all trout	832,187	117,486

**Sale of Fingerling Trout.** The sale of surplus fingerling trout to private pond owners was continued during this fiscal period, and 34,900 fingerling trout were sold to 96 pond owners. Receipts from these sales were \$1,745.

**Trout Stocking in Ponds.** In recent years, the Department has stocked trout in increased numbers in ponds. This has been necessary to keep pace with angling pressure on all of the waters of the state. Brown trout will be stocked almost exclusively in the future in lakes which also contain a warm-water fish population; the numbers of trout allotted to such waters will be determined by the volume of good quality trout water each contains.

The study conducted for the past two years at Wononscopomuc Lake, Lakeville, to test the survival and capture of the three common species of trout indicates that brown trout are more economical, in terms of catch returns, for stocking in lakes containing warm-water fish than either brook or rainbow trout. Nearly twice as many browns as brook trout were creelred at this lake and about 60% more browns were taken than rainbows although all were stocked in equal numbers.

Certain lakes would provide much better fishing for trout if all other species were removed. Three ponds were so treated this year and restocked with trout.

**Warm-Water Fish Program.** The principal features of a warm-water fish program are biological surveys to find out how to manipulate fish populations or change habitat to increase the natural production of desirable fish. Fishery survey work has been going on each summer for a number of years and all of the state's impoundments will have been covered by the end of 1955. During this year, survey recommendations have led to removal of all fish (mostly carp) from Beseck Lake, Middlefield, preparatory to stocking with bass and other desirable fish. Excessive aquatic vegetation has been completely or partially removed from four lakes totaling 330 acres at a cost for chemicals of \$2,610

Three more warm-water fish cultural ponds were renovated during this period at the Kensington station which now has six of these ponds, all used for rearing largemouth bass. Production of the first three, put in operation last summer, was 26,546 fingerling bass.

**Shad.** Reports from commercial fishermen of shad caught during any fiscal period are not received in this office until after the date when the annual report for that period must be submitted. The reports for 1954 show a total catch of 83,828 shad, made up of 34,243 buck shad and 49,585 roes. It was estimated that this catch would have a wholesale market value of \$43,848. The actual return to persons involved in the fishery was probably in excess of \$80,000, as many more fish are boned, frozen and marketed locally than in previous years.

Angling for shad at the state-regulated area at Enfield Dam was unusually successful during the spring of 1955. At this one small location, 4,237 angler trips were recorded, resulting in a catch of 5,396 shad. It is probable that the total angler catch of shad from the river is more than triple this figure.

**Lobster Work.** A two-year study was completed which proved conclusively that lobster culture was of no benefit to the lobster fishery. The Board, therefore, recommended abandonment of these expensive facilities. The legislature passed a bill which transferred the Noank Lobster Hatchery to the University of Connecticut for use as a marine biological laboratory. The act repealed the law which appropriated \$5,000 annually for the purchase and release of egg-bearing lobsters. This year, 2,744 such lobsters were purchased for \$3,600.44 from lobstermen and returned to the water.

Cessation of lobster culture and the purchase-release program does not indicate any lack of interest in the lobster fishery, but only lack of faith in these specific restoration methods. The Board will increase enforcement of the lobster laws and will put into practice any management measures which marine research indicates would be of help to the fishery.

**Miscellaneous Development.** In addition to the above activities, the division has accomplished the repair of the right-of-way to Uncas Lake (Hog Pond), Lyme; the graveling and drainage of the Bolton Lake Right-of-Way; the establishment of a truck trail along Dickensen Creek, East Hampton, to facilitate trout stocking; and the improvement of the Coginchaug River for trout fishing and stocking by dredging a channel about 5,000 feet long, where the stream formerly spread out over the Durham Meadows.

### Game Program

Funds expended for the purchase of pheasants during the year were approximately \$6,300 less than the previous year, yet the number of pheasants released was reduced only by 600 birds. The average cost per adult pheasant released was \$1.85, which is 15¢ lower than the previous year. This saving can be attributed to the Enfield Prison Farm Program and the six-week-old pheasant program with sportsmen's clubs.

#### TOTAL ADULT PHEASANTS LIBERATED

Fall 1954	31,300
Post Season and Spring, 1955 (Breeding Stock)	4,066
	<u>35,366</u>

**Six-Week-Old Pheasant Program.** Thirty-seven sportsmen's clubs participating in the program this year reared 9,678 birds. The program had its highest

percentage of rearing success (90.8%) since the start of the program in 1946. This can be attributed to efforts of cooperating clubs to reduce the gapeworm problem by treating their pens with chlorodane, periodic inspection by departmental personnel, and the debeaking of the birds whenever feather picking became a factor.

**Prison Farm Program.** The first year's production of pheasants at the Prison Farm was successful. Over 5,200 quality adult pheasants were raised at a cost to the Department of \$9,478.73.

**Cooperative Programs.** Participation by sportsmen's clubs in cooperative game programs decreased 6.7% from last year. This reduction reflects the loss of hunting lands in the central and southwestern part of the state. It is anticipated that the reduction in club participation will continue until sportsmen's groups in the eastern half of the state organize and undertake a more active part in these cooperative programs. Boy Scouts continue to take an active interest in conservation work, assisting in various work projects.

**New Program.** Game biologists assigned under the new district organization were quick to initiate and complete game projects. The Park and Forest Commission's rangers and work crews were of great help to the Department, particularly in the forest game projects.

The forest game projects included conifer plantings for game cover; forest thinning, clearing, and planting for food and cover; construction of access roads. Two hundred and seventy-six acres of land were improved.

Farm game projects on 145 acres of land involved planting of trees and shrubs for food and cover, release cutting for food and cover species, and grain planting.

The waterfowl projects resulted in construction of 289 wood duck nesting boxes, 24,218 feet of level ditching, and 75 acres of flooded woodland cleared of woody vegetation.

**Mallard Rearing Program.** During the year, a mallard rearing project was established at Franklin. This project involved the building of an incubator room, five brooding units, a fenced hardening pond, and a holding pond for breeders. During early summer, 1,160 six-week-old mallards were released in groups of ten birds each on approximately 75 waterfowl marshes and ponds. It is hoped that these mallard releases will increase the breeding range of the mallards in Connecticut as well as provide targets during the waterfowl season. The capacity of this mallard rearing farm at Franklin will not exceed 1,500 birds unless an extensive building program is undertaken.

### Law Enforcement and Field Services

The conservation officers are charged with the responsibility of protecting all wildlife, not merely those forms which are taken for food or sport, in the state through the enforcement of the fish and game laws and regulations.

In the past year, the personnel of the field force has taken a much more active part in wildlife management projects and this has cut the time spent on law enforcement. Time spent on law enforcement was 24.9% as compared to 35.9% for the previous year. There were 183 arrests made with 180 (98%) being convicted, and 488 warnings were issued. In addition, 53 arrests were made this year by officers other than departmental personnel; only 18 such arrests were made last year.

The objective of this Department under the new program was to cut time

spent by the men on law enforcement to about 25%. In order to augment enforcement work, a group of volunteer constables has been organized and instructed to help enforce the fish and game laws in the towns of their appointment. This phase of the program has progressed to the point where, since January, 1955, approximately 217 constables have volunteered and been given a course of instruction. This expanding force of volunteers should, in the near future, give the state more effective fish and game law enforcement than previously. In addition to expansion of this volunteer group, the field biologists and personnel of the other divisions of this Department will be appointed as special conservation officers to assist in law enforcement.

During the year, the conservation officers investigated the killing of 181 deer, killed as follows: motor vehicles, 109; gunshot, 38; drowned, seven; dogs, seven; found injured, 11; trains, two; unknown, seven.

There were 12 hunting accidents, none fatal, but seven persons were drowned while fishing.

### Land and Water Acquisition

There is the greatest urgency connected with acquiring certain categories of real estate if our citizens of tomorrow are to have public hunting and fishing. The Board has stressed this point on numerous occasions and will continue to make every effort to secure, in state ownership, certain lands and waters that are needed by the people for out-of-door recreation.

A strong plea for acquisition funds was made to the legislature. In addition, the Governor had included in his Capital Projects Budget a recommendation that the sum of \$500,000 be appropriated from the Bond Fund to the Forest and Wildlife Commission and this money, had it been made available, would have been spent partly on fish and game properties. The legislature did pass a Finance Committee bill which appropriated \$100,000 from the Bond Fund to this Department. Although this amount is less than requested, it will get an acquisition program started. Perhaps the most significant aspect of this appropriation is that it shows legislative recognition of the need for the state to acquire lands and water for public hunting and fishing.

Since no General Fund moneys were available, as much acquisition work was done with special funds and federal aid funds as the budget would permit. The Board purchased six parcels of inland marsh and upland game land with a total area of 296 acres; 16 parcels of tidal marsh totaling 41 acres; the Morey Pond property of 55 acres; and one parcel of about 60 acres on the Yantic River which give public ownership of about three-quarters of a mile of the best portion of the stream. In addition, the Board was deeded 648 acres in Stonington, including the Assekonk Swamp, by the federal government which was liquidating the assets of the old Resettlement Administration. A total of \$29,936 of these special funds was spent for these properties.

### Conservation Education Program

The Education Division of the Department started functioning in April with the appointment of a Chief of the Division. The division has two major objectives: first, to inform the people of the state about the programs of the Department so that they will better understand how they can participate and contribute their efforts; second, to develop within the state an awareness that, if Connecticut is to have wildlife resources worth consideration, great changes in public attitudes relative to these resources must come about.

# STATE OF NEW YORK

IN SENATE  
January 10, 1907.

REPORT OF THE  
COMMISSIONERS OF THE LAND OFFICE

FOR THE YEAR ENDING  
DECEMBER 31, 1906.

ALBANY: JAMES BROWN PUBLISHER, 1907.

The first of the reports of the Commission on the subject of the land office, published in 1897, was the first of a series of reports which have since been published. The reports of 1897 and 1900 were the first to be published in the form of a book, and the reports of 1903 and 1906 were the first to be published in the form of a book. The reports of 1903 and 1906 were the first to be published in the form of a book, and the reports of 1903 and 1906 were the first to be published in the form of a book.

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ALBANY: JAMES BROWN PUBLISHER, 1907.

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370-36,002  
STATE BOARD OF  
FISHERIES AND GAME



LYLE M. THORPE

Director

*Deputy administrator*—Thomas E. Rose, Assistant Director  
*Established*—1866. *Statutory authority*—Chapter 246, General Statutes  
*Central office*—2 Wethersfield Ave., Hartford, Tel. JACKSON 7-6341,  
Ext. 2369

*Average number of full-time employees*—90

*Expenditures 1955-1956*—Recurring operating expenditures,  
\$745,333.69; *Capital outlay*, \$31,848.49

*Organization structure*—Six Divisions: Administration, Fish, Game, Con-  
servation, Education and Information, Land Acquisition.

Our past three reports, read concurrently, present the picture of a state agency in the throes of reorganization, critical self-analysis, appraisal of the challenges imposed on wildlife resources by our people and our times, and reappraisal of past programs which seemed to have serious inadequacies in meeting these challenges. There was decision and planning as how to best reorient programs to meet these challenges. There was enunciation of policy and long-range objectives and the creation of an organization of men physically equipped and mentally conditioned to do the things that had to be done. This time of growing pains, this period of trying and testing, is largely behind us and thus our report is concerned with a narrative of progress along paths which were previously mapped.

The Board of Commissioners is composed of Daniel Merriman, New Haven, chairman; Gordon Lamont, Darien; David C. Mahoney, West Hartford; Belton A. Copp, Old Lyme; and Rudy Frank, Bridgeport.

Fish and game administration is difficult for it requires the use of involved biological techniques not readily understood by the layman, and regulation of the conduct of people which inevitably generates strains and resentments, but no fish and game program can be successful without the confidence and support of those citizens most closely concerned. To us, then, public confidence is not simply a matter of pleasant public relations but rather is a matter vital to the attainment of our objectives of perpetuating wildlife resources for the future. In this spirit, we wish to report that we believe the majority of people interested in wildlife conservation have confidence in the Board, and therefore we anticipate continued progress of our program as it was published in May, 1954.

### The People Must Understand

If a people are to retain their natural resources, they must understand certain basic conservation facts. Wildlife is simply a crop of the land, and true conservation education must convey a broad understanding of the inter-relationships

of soil, water, forests, and wildlife. The sportsmen are primarily interested in the crops yielded by good conservation practices, but we feel an obligation to try to teach all of our people, and particularly the youngsters, that with faith and knowledge and good sense we can have wildlife to use and enjoy, even in this heavily populated state.

A conservation education program embodying lectures, literature, and visual aids has been started for schools, Granges, 4-H Clubs, scouts, and other organizations. We have worked with other members of a special committee of the Natural Resources Council to set up a syllabus to aid teachers who want to give courses in conservation education. We believe that this subject should be taught in all of our public schools. Many talks have been given to sportsmen's and service organizations and we have helped these organizations in preparing wildlife conservation exhibits and courses.

A bimonthly wildlife conservation bulletin was started with a September-October, 1955, issue, and at the end of the fiscal year was going to about 1,700 paid subscribers and to a free mailing list of about 4,000 schools, libraries, legislators, trial justices, educators, state and federal agencies, and conservation organizations. Movie footage and slide series illustrating various facets of wildlife conservation have been prepared, mostly for adult audiences.

The hunter-safety program, initiated by the 1955 legislature, has progressed fairly well with 337 volunteers throughout the state, certified by the National Rifle Association as to competence, serving as instructors. The principle of the hunter-safety law is sound, but contains some weaknesses which must be corrected. A statewide, weekly, fishing advisory service was started in the spring of 1956 which stresses opportunities for salt water fishing and seems to be serving a worthwhile purpose.

### There Must be a Place to Go

People in an industrial state have great need for out-of-door recreation of all types. The acquisition of state parks and forests partially met these needs, but the job of guaranteeing opportunity for the public to hunt and fish, to launch boats on our waterways, to photograph or simply to contemplate the life of marsh and stream and lake was too long neglected. The rapid urbanization of rural areas after World War II resulted in terrific competition for the streams, lakes, and shore-front property, and suddenly city people found such places denied to their use. Agriculture was employing new techniques to drain inland marshes, and municipalities were using such areas for town dumps. The once extensive shore marshes had been damaged in the 1930's by mosquito control work, and then came the practice of filling marshes with hydraulic fill to create dry land swept along the shore. The past five years have seen the total destruction of more marsh areas than occurred in all the years prior to that time and today there is left only a small part of these areas—the heart-land of hunting and fishing.

The last General Assembly took cognizance of the fact that opportunity for continued public enjoyment of wildlife depends upon state ownership of certain key areas and appropriated \$100,000 to this agency for land and water acquisition. There was delay in freeing these funds for our use due to the flood emergency so that acquisition financed by this means did not get well under way until late in the reporting period. Access points on Rogers Lake, Old Lyme, and Lantern Hill Pond, Ledyard, were purchased, as were the flowage rights on Hog Pond and Norwich Pond, both in Lyme. A key, 80-acre parcel of marsh and upland was acquired in Bethel.

During this period we financed the purchase of 42 acres of marsh, 35 additional acres of Burlington Hatchery watershed, and permanent fishing rights on about 4.7 bank miles of the Willimantic River out of special funds.

We were presented with a desirable public access to Little Pond, Thompson, and a small addition to the state-owned access point at Hayward Lake, East Haddam.

The Bond Fund contributed \$15,297.98 and the special funds \$14,885.65 to the acquisition program. At the end of the year, sufficient preliminary work had been done to indicate that many more valuable wildlife areas would soon be in state ownership. The judgment of time may well be that this first appropriation, solely for the acquisition of wildlife areas, was one of the best possible investments in the future of the state.

### Fish to Seek

The fish program works under the broad objectives of trying to make every water area contribute its maximum amount of fish for recreation and for food, to help those who have a will to improve fishing in any area, to develop access sites so that the public can use the water resources without infringing on the rights of private ownership. The program deals with three broad categories of fish—trout, warm water pond fish, and marine and anadromous species, which require quite different treatment.

**Trout.** The trout program is based upon specialized animal husbandry and stocking because natural production in our abused waters cannot begin to meet the demands for trout put upon them.

The table below records the trout stocking for the period:

	No. of Trout	No. of Lbs.
Brook trout adults	126,317	36,357
Brown trout adults	164,673	73,289
Rainbow trout adults	16,230	6,960
Total adults	307,220	116,606
Brook trout fry and fingerlings	69,535	920
Brown trout fry and fingerlings	211,496	415
Rainbow trout fry and fingerlings	29,140	81
Total fry and fingerlings	310,171	1,416

About one-third of these adult trout were stocked in 48 lakes and ponds and the remainder distributed in 280 streams. A number of clubs also purchase trout from commercial hatcheries for stocking waters of particular interest to their members. A number of these clubs, such as the Danbury Fish and Game Club and the Meriden Rod and Gun Club, stock waters which are open to public fishing.

In addition, 32,370 surplus fingerlings were sold at cost on a cash and carry basis to 99 small farm pond owners for \$1,618.50. This sale of trout, together with the detailed advice on care and management which is provided, is a device for helping farmers help themselves make a little back yard fishing and is also a small gesture of appreciation for the fact that these rural landowners provide much of the public hunting opportunity.

Much is being learned about the most efficient way to develop trout fishing in lakes by a study going on at Wononscopomuc Lake, Salisbury, where the returns to the angler are being measured from various sizes and species of trout

stocked at various times of the year. Trout are expensive, so it is important to seek maximum returns from stocking them.

**Warm Water Pond Fish.** A survey of the fresh water impoundments was completed during this year and will soon be published. The survey data include information on the physical characteristics, chemical properties of the water, fish food production, vegetation, and information on the fish population present, such as growth rate, parasitism, and rate of harvesting. These data are interpreted in the form of specific recommendations for the improvement of fishing. At this time, the state has 3,672 impoundments, not including water supply reservoirs, with a combined area of 38,920 acres. According to the State Health Department, there are 196 water supply reservoirs totaling 17,852 acres. Only three of the lakes, over 1,000 acres in area, are open to public fishing, and there are 161 such impoundments with a combined area of 28,491 acres. The state is liberally dotted with small lakes and ponds, and these waters represent a terrific recreation potential.

The survey revealed many things that can be done to increase fish production and better use of these waters, and the survey recommendations are being put into practice as fast as possible. Twenty-seven impoundments, with a total of 4,386 acres and open to fishing, are best suited for trout. In these waters the most efficient method of providing fishing would be complete removal of warm water species and replacement with a trout population. A small start on this program has been made, but Connecticut people tend to oppose the practice, mostly because of an unsound idea that all waters should contain all the kinds of fish that they would like to catch.

Smallmouth bass fishing has declined in this state and this seems to be the result of heavy infestation of bass tapeworm which damages the reproductive organs of the bass. Complete removal of all fish and restocking with uninfested stock is the only known remedy.

Many of the shallow lakes are now so weed-infested that fish production, boating, and swimming all suffer. We have worked out a technique and built special equipment to remove these weeds with chemicals. This year, 711 acres were so treated at a cost of \$5.33 per acre for materials, and this program is being expanded.

Lake Lillinonah, the new 1,900-acre power reservoir built by the Connecticut Light and Power Company on the Housatonic River, should provide much public recreation. Last spring, the Department stocked 9,570,000 pike perch fry obtained from Ohio and New York and 3,070 adult alewives to provide a suitable forage species for the game fish. This attempt to establish a pike perch fishery in the state may not succeed, but the potential recreation involved justifies the gamble.

**Marine and Anadromous Fishes.** The management of salt water species and those that move from the sea into fresh water to spawn consists primarily of investigations to discover what factors subject to human control can be manipulated in order to increase production or to hold a high level of abundance.

**Shad.** Commercial fishermen reported a catch of 59,841 shad (22,359 bucks, 37,482 roes) during the 1955 run, with a wholesale value of \$28,215. In recent years, the trend toward disposing of the catch on the local market as boned shad has increased and it is now estimated that two-thirds of the catch is used in this way. Average retail value per shad is about \$1.

**Angling for Shad Improved in 1956.** A complete record of catch and effort expended is kept at the state-controlled area at the Enfield Dam where 4,368 anglers took 5,451 shad. A creel census of other shad-fishing spots on the Con-

necticut and Farmington Rivers indicates that the sport fishery provided 16,600 angler trips which harvested 18,823 shad and released an additional 7,500 fish as the result of the six-per-day limit.

**Striped Bass.** A study of stripers has been carried on during the year in coordination with other bass states on the Atlantic seaboard. The broad objective is to find means, if possible, to increase the striper population. The study is designed to discover whether, and if so where, bass reproduce in this state, whether bass which move into our waters are part of a homogenous group, or are a distinct race, and whether factors of pollution, etc. are of significance in restricting the numbers of this species.

**Sea-Run Trout.** A number of our costal streams have small runs of sea-run brown trout and, from the angling standpoint, these are choice fish—almost in the class with salmon. Efforts are being made to find out the nature and extent of these runs. Trout are denied access to many coastal streams by impassable dams, and efforts are under way to have fishways installed where sea-run trout are now known to exist. Some stocking with marked fish has been done to augment these runs and the results are being tested by sampling with electro fishing devices.

**Developmental Work.** During the year, the Department has done considerable work in modernizing and improving the existing hatchery facilities. The Burlington Hatchery suffered extensive flood damage. Repairs were made immediately by our crews and all damaged dams were strengthened against a repetition. At Windsor Locks, extensive improvements include a service road, devices to control siltation in the two main springs, the addition of several new raceways and rearing pools, and development of new springs. At Kensington, two new springs and a rearing pool were developed, and a needed addition to the garage for truck storage and workshop room was built.

During this year, the Fish Division developed access points to nine lakes and one salt water area. Typical development consists of a graveled road to the shore where a car parking lot is constructed and a boat launching ramp and tie-up area is installed. The total road footage included in this development work is 16,270 feet. The total parking area is 107,580 square feet. In addition, the Fish Fund was pooled with Game Funds to pay the cost of a small boat marina at Great Island, Old Lyme.

### Game to Hunt

The game program has greatly expanded its work in the general area of habitat improvement while holding the approximate level of recent years in the pheasant stocking program, one of the toughest dilemmas the Department has to face. Connecticut has little good pheasant habitat, yet there are considerable huntable areas which produce little or no wildlife but which provide hunting if stocked with pheasant, the only practicable game to stock. But pheasants are costly—\$1.86 per bird on the average—and not many hunters are willing to contribute enough in license fees to pay for good gunning through stocking alone. In the fall of 1955, 30,778 pheasants were stocked just prior to and during the shooting season and an additional 3,129 breeders were stocked in selected covers after the shooting season closed and in the spring. The Enfield Prison Farm produced 5,813 excellent pheasants for this year's stocking.

The number of sportsmen's clubs cooperating in game projects shows a decline but other groups, such as the scouts, high school conservation clubs, and garden clubs, are participating in wildlife conservation projects better than ever be-

fore. We believe this increased interest is largely the result of the conservation education program which supplies these groups with leadership and specific work instruction.

The production of mallard ducks, which was started last year at Franklin, was continued this year. This activity ties in with the building of small marshes, and the improvement of existing marshes for the stocking of good breeding stock in these areas is a quick way to increase the state's waterfowl population. A total of 1,518 were reared and released on 137 different marshes and ponds during June and July.

The field force has been making excellent progress on habitat improvement work throughout the state. While much of this work was concentrated on state-owned lands, we have seized many opportunities to work with interested land-owners on private property.

**Farm Game.** In order to improve conditions for pheasants and cottontail rabbits, selective cutting and poisoning to release food-bearing shrubs were done on 35 acres, 157,140 trees and shrubs were planted, 47 food patches totaling 21.7 acres were planted, 380 winter feeding stations were constructed and serviced, 411 grafts were made on wild apple trees, and 1,400 feet of fence were built to protect wildlife food and cover.

**Forest Game.** The ruffed grouse and deer are the chief beneficiaries of the forest game program but cottontail rabbits benefit from much of it. The varying hare, or snowshoe rabbit, is a native forest species and a fine game animal but is not abundant in this state. A study has been started to attempt to find out what can be done to increase its numbers.

The forest game program created 172 openings totaling 85 acres, seeded them to herbaceous cover, and did routine maintenance work on an additional 35 acres of openings; 250.5 acres were thinned to improve food and cover; 11,950 conifers were planted, and scions were grafted to 295 wild apple trees.

**Waterfowl Program.** Ten small marshes, with an area of 69 acres, were constructed; 3,680 feet of standard level ditch (12 feet wide, 3 to 5 feet deep) were dug by dragline; eight small, stream-side potholes were constructed; 1,655 feet of fence were built to protect food and cover; 11.5 acres of marsh were sprayed to control undesirable vegetation; 18 acres of food patches were planted; 518 wood duck nesting boxes were constructed and 476 others inspected and maintained; 50 areas were trapped for snapping turtles. In order to help waterfowl hunters and to discourage improper use of public waterfowl marshes, 60 blinds were built. These statistics enumerate the work of a field force which is encouraged by the conviction that by doing the right thing at the right time to help nature there will be more wildlife for the future.

### The Man with the Badge

Previous reports told of the creation of a unique field force which had within itself all of the skills necessary to do practical wildlife management and law enforcement. This force of 36 men, composed of Conservation Officers and Fish and Game Biologists under the immediate supervision of four District Supervisors, are the men who have done or have supervised the management work mentioned previously and these are the men charged with protecting all wildlife and enforcing the fish and game laws and regulations.

This year, 30% of the time of this field force was spent on law enforcement, and this resulted in 376 arrests and the issuance of 671 official warnings. (For

comparative purposes, last year law enforcement used up 24.9% of their time and resulted in 183 arrests and 488 warnings.)

Many towns assist in law enforcement within their borders by appointing special constables to work with our men. These constables, now 256 strong, have been organized and given special training by our men in wildlife police work, and these men have given us much help, particularly in curbing violations and easing the tensions which sometimes build up between sportsmen and rural property owners. In addition to the arrests and warnings made by our men, there were 46 arrests, 53 assists, and nine warnings by other enforcement officers, and most of this work was done by the constables.

The courts supported our arrests by convicting 94% of those brought before them, and those convicted were dealt with by the Board in the matter of suspension of hunting and fishing privileges.

During the year, the Conservation Officers investigated the killing of 255 deer with the cause of death assigned as follows: motor vehicle, 118; gunshot, 62; drowned, six; dogs, 47; trains, one; self-inflicted injuries necessitating disposal, four; miscellaneous and unknown, 17.

This year saw two persons killed and seven wounded in hunting accidents, and four persons died by drowning while fishing.

### **Business Affairs**

We requested and received help from the Management Analysis Section of the Budget Division in bringing increased efficiency into the handling of our business offices. A careful study was made of each operation, resulting in recommendations which simplify methods and give better accountability. These recommendations are being put into effect as fast as is possible. One change, which will interest the license holder, is a new punch card system of issuing licenses which is convenient for the licensee and better from the standpoint of the town clerks and the State Treasurer.

This year a total of 127,416 licenses, of all types, were issued which represents a decrease of 6,033 from last year.

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**STATE BOARD OF  
FISHERIES AND GAME**

MAR 28 1958

**LYLE M. THORPE**  
*Director*

HARTFORD  
CONNECTICUT

*Deputy administrator*—Thomas E. Rose, Assistant Director  
*Established*—1866. *Statutory authority*—Chapter 246, General Statutes  
*Central Office*—2 Wethersfield Ave., Hartford, Tel. JACKSON 7-6341

*Average number of full-time employees*—87

*Expenditures 1956-1957*—Recurring operating expenditures, \$809,029.66;  
Capital outlay, \$128,143.35

*Organization structure*—Six divisions: Administration, Fish, Game, Law  
Enforcement, Education and Information, Land Acquisition.



THIS REPORT is principally a summation of progress of planning outlined in the previous four reports. It will be seen that much has been done to improve Connecticut's wildlife resource and, in turn, opportunities for healthful outdoor recreation by Connecticut's human population.

The year saw three changes in the Board of Commissioners. John S. Purtill of Glastonbury replaced Daniel Merriman of New Haven, and George F. Flavell of Manchester replaced Gordon Lamont of Darien. In addition, Patrick J. Ward of Hartford was appointed to fill the unexpired term of Belton A.

Copp of Old Lyme who had resigned in protest over legislative changes in the budget which had been carefully prepared to carry out the Department's program. David C. Mahoney of West Hartford and Rudy Frank of Bridgeport continued as members of the Board.

Administration of the fish and game resource in a state where a large proportion of the people are unfamiliar with that resource or its requirements is a difficult task. The administrators are faced with the problem of improving conditions for wildlife and supplying outdoor recreation in a situation where the necessary lands and waters are being rapidly withdrawn from wildlife productivity by residential and industrial development, highway construction, marsh filling, etc.

**The People Must Know**

The first step toward solution of the problem outlined above requires developing an awareness among the people that very definite sociological as well as biological factors are involved in Connecticut in maintaining a good wildlife resource. Connecticut residents are, in general, fully in agreement with the broader concepts of wildlife and conservation management. They frequently fail, however, to accept the fact that a certain amount of personal sacrifice is necessary if man and wildlife are to exist side by side in this thickly populated state.

A major responsibility of the Board's Division of Education is to try to develop new attitudes in the people of the state. In the two years that the Division of Education has been in existence it has become increasingly evident that the services it offers the people of the state are greatly sought after.

Circulation of the bimonthly *Wildlife Conservation Bulletin* is now over 7,100 copies, of which approximately 3,000 are paid subscriptions. This represents a two-year increase in circulation of approximately 75%. The weekly fishing advisory, started as a service to Connecticut newspapers in 1956, is now sent by request to many persons and agencies, not only in Connecticut, but in neighboring states as well. Educational material prepared for schools is being well accepted and has stimulated many requests by students for additional information. Schools and civic organizations have made increasing use of the services of departmental personnel for speaking programs; slides and films have been prepared to illustrate these lectures. Cooperation of the Board has been sought in planning and assisting with conservation camps and workshops. The willingness of WTIC-TV to plan a 15-minute weekly wildlife conservation program, providing public service time during a very favorable evening spot, is further indication of the great interest people have in wildlife. This TV program will be educational, as are all the other major activities of the division, and aimed toward teaching the conservation of Connecticut's wildlife resource. In addition, an estimated 2,000 new hunters are certified yearly under the hunter safety program administered by the Board.

Outdoor recreation in its many forms is most important to the health and well-being of Connecticut's people. Development in this human population of an understanding of the needs of Connecticut's wildlife resource, so that this resource can provide the maximum enjoyment and benefit to the people, will be a continued aim of the Division of Education. But a resource without facilities for its enjoyment is wasted; the people of Connecticut must have—

### A Place to Play

Competition for land is keen in Connecticut and the Board must continue and intensify its efforts to effect a proper balance of land use. Also, Connecticut residents must be stimulated to accept to a greater degree the concept of multiple use.

Many times marsh lands and flood plains which are best suited for wildlife attract other uses only because they are "cheap" lands. The state should be able to purchase these lands while they are still available because when they are privately developed they are lost to wildlife forever.

Streams, lakes and the shore are all becoming increasingly used by people for recreational purposes. These areas will be restricted to comparatively few people unless the Board continues efforts, and has funds available, to purchase and develop public access points to such areas.

The Board started the fiscal year 1956-57 with a balance of \$85,350 from the 1955 Bond Fund appropriation of \$100,000. This balance has been used or committed for the following purchases:

Access Points—Ball Pond, New Fairfield; Hatch Pond, Kent; Dooley Pond, Middletown (pond & access); Avery Pond, Preston; Lake Kenosia, Danbury; Billings Lake, North Stonington; Pickerel Lake, Colchester; Waumgumbaog Lake, Coventry; Long Pond, Ledyard; Amos Lake, Preston; North Farms Reservoir, Wallingford (pond & access); Niantic River, Waterford; Salmon River, Comstock Bridge; Dickinson Creek, Comstock Bridge; Pine Island Bay, Groton.

Tidal Marsh and Upland—31 acres. From special funds totaling \$11,712, there

were purchased, or commitments made of 32 acres of tidal marsh and upland, 12½ acres of inland marsh and upland, permanent fishing rights on five bank miles of the Five Mile River, access to the Willimantic River at Willington and to the Natchaug River at Chaplin, and additional land and brook adjoining the state trout hatchery at Windsor Locks.

The total expenditures for land and water acquisition during this period totaled \$97,062 of which the Bond Fund contributed \$85,350 and the Special Fund \$11,712. Development of such areas after they are acquired is done entirely from special funds derived from the sale of hunting and fishing licenses, so that by the time areas can be used by the public, approximately equal shares have been expended from the General and Special Funds.

The 1957 General Assembly appropriated \$100,000 from the Bond Fund for the next biennium. Of this appropriation, \$55,000 has already been committed and preliminary work indicates that the balance will be used within a few months.

Our way of life continues to increase the amount of leisure time for everyone; the acquisition of recreational areas or access thereto will undoubtedly prove to be one of the wisest investments the state could possibly make for its people. Such acquisition will provide—

### Fish to Seek

The scope of the fish program is quite broad and the Department will use any reasonable method which is economically feasible to improve fishing in the state. Methods approved and adopted are as diverse in range as rearing and stocking catchable-sized fish to clearing stream banks of brush so that fish may be caught from them. Methods to improve fishing commonly practiced by the Department include rearing and stocking of fish, thinning of over-populated species, noxious aquatic weed control, purchase and lease of fishing waters, introduction of new fish species when study shows such introduction advantageous, reclamation or removal of entire fish populations from ponds to allow for restocking with more suitable species, and advice to owners of private waters for the improvement of fishing.

Trout. For the past three years, trout stocking has been held quite closely to the 100,000-pound yearly stocking limit outlined in the Department program. However, during the 1956-57 stocking season more ponds and streams became available for stocking and, to meet these demands, additional trout were reared and purchased as shown below:

#### Total Trout Planted July 1, 1956—June 30, 1957

	No. of Trout	Pounds
Brook Trout Adults	135,509	36,964
Brown Trout Adults	198,608	88,644
Rainbow Trout Adults	27,810	9,313
<b>Total Adults</b>	<b>361,927</b>	<b>134,921</b>
Brook Trout Fry and Fingerlings	90,000	69
Brown Trout Fry and Fingerlings	122,785	525
Rainbow Trout Fry and Fingerlings	7,116	153
<b>Total Fry and Fingerlings</b>	<b>219,901</b>	<b>747</b>

A little less than one-third of the adult trout listed above were stocked in 52 lakes and ponds and the remainder in 287 streams. The large increase in ponds stocked with trout during the past several years has been due to the

discovery that relatively small brown trout stockings can produce good trout fishing in many ponds where brooks or rainbows do not survive.

During the past season, the Department sold 33,440 fingerling rainbow and brown trout to 118 owners of small, private ponds at a return of \$1,672. This program, designed to assist the landowners to obtain small trout easily for a reasonable cost, is increasing in popularity.

**Warm-Water Pond Fish.** Some success has been derived from attempts to improve fishing in warm-water lakes. At least some of the pike-perch stocked as fry in Lake Lillinonah in the spring of 1956 survived and grew. Test nettings last fall took several pike-perch up to ten inches long. In the spring of 1957 an additional supply of eggs was secured from Ohio and Canada and flown into the state. At the Burlington Hatchery 5,290,000 fry were hatched and transported for stocking in Lake Lillinonah. Fish of the original stocking continued to make good growth gains as disclosed by test nettings in the spring of 1957 when two pike-perch over 11 inches long were taken. Future studies will show if this species has reproduced and become established as a self-perpetuating population. An attempt to learn if pike-perch could be artificially reared in Connecticut from fry to fingerling size was also made this spring.

It was reported last year that small mouth bass had become rare in most of the lakes in the state, possibly as the result of infestation by bass tapeworm, and that there was no known remedy for such a condition except complete removal of infested fish and restocking with uninfested ones. Such a stock of bass has since been located and during this spring an attempt has been made to rear "clean" smallmouth bass at the Kensington Hatchery. Seasonal disturbances this spring caused the bass to leave the nests prematurely, but a fresh attempt to rear smallmouth bass will be made next year.

The largemouth bass held at the Kensington Hatchery were also disturbed in nesting by a late cold spell, but a few re-nested; the offspring will result in several thousand fingerlings for fall stocking.

The Department, several years ago, entered into a program for the control of noxious weeds. Many lakes and ponds which, for many years, had been so filled with weeds that swimming, fishing and other forms of boating and recreation had been practically impossible, are now nearly free of weeds.

For many years it has been known that the most economical method of producing good trout fishing in lakes best suited for the production of these fish is removal of all warm-water fish and restocking with trout fingerlings. In the absence of competing warm-water species, the trout thrive and rival the speed of growth in a hatchery. However, Connecticut has been slow to practice this money-saving technique because of the general resistance of uninformed people. Some of this resistance seems to be dying out and during the past fiscal period, five ponds, all state-owned, were reclaimed and restocked with trout. These waters are Mohawk Pond, Cornwall-Goshen; Black Rock Pond, Watertown; Uncas Lake, Lyme; Norwich Pond, Lyme; Beaver Park Pond, Windham; and Greenfalls Reservoir, Voluntown.

Greenfalls Reservoir is marginal trout water with a poor potential for fish production. Although it contains a satisfactory amount of cold, well-oxygenated water, it is infertile and has a very low fish food production. Also, the water is dark and acid, a condition not well tolerated by rainbow trout. To correct the acid condition, clarify the water, and improve food production, eight tons of hydrated lime and 20 tons of ground limestone were added to the waters of the lake during the winter and spring. Water conditions improved to the extent that spring-stocked rainbow trout survived and furnished good fishing.

**Marine and Anadromous.** In recent years, Connecticut has seen a tremendous increase in salt water anglers. The actual number of anglers and the size of the yearly increase are not known, nor is it known what species or several species of fish the majority of these anglers prefer to fish for. To answer some of these questions, the Department inaugurated a project financed by federal aid funds. The project was established in 1955 primarily to fit into a coordinated Atlantic coast study of the striper, but with a secondary objective of studying all aspects of the salt water sports fishery of the Connecticut coast. It was temporarily discontinued when the Department's marine biologist left state service, but it was resumed last fall and is now progressing satisfactorily.

**Shad.** Commercial shad fishermen reported a catch of 55,285 shad (19,345 bucks—35,940 roes) during the 1956 run, with a wholesale value of \$31,073.40. This figure is deceptive, however, because at present most of the Connecticut commercial catch of shad is boned and sold locally at an average retail price of about \$1 per shad.

**Angling for Shad.** The shad angling fishery improved in 1957. A creel census taken by the U. S. Fish and Wildlife Service showed that during this spring shad run anglers took and kept 24,516 shad. If fishermen released about one-third of the shad caught, because of the six-per-day limit, as they did in 1956, then the total catch would have been about 36,000.

**Sea-Run Trout.** Considerable work has been done on the study of sea-run brown trout. It has been determined that only about four of the coastal streams investigated had a large enough run of trout to be important. These were Latimer's Brook in East Lyme; the Farm River, East Haven-Branford; the Hammonasset River, Clinton-Madison; and the Saugatuck River, Westport. Although some natural reproduction was found in some of these streams, it has been established that the majority of the salters are actually strays from stocking hatchery fish farther upstream. Efforts are now being made to find the methods of stocking that will produce the greatest numbers of sea-run trout for the smallest cost.

**Developmental Work.** Work is continuing on the development of hatchery facilities. At Windsor Locks, the hatchery building has been renovated by the addition of a new ceiling, side walls, and lighting. Outside, 13 new raceways capable of rearing 40,000 yearling trout were completed. A second service road was completed from which new raceways will be built and serviced. Plans for the raceways are completed.

Through these developments it is hoped that the production at Windsor Locks will soon reach 15,000 pounds of catchable trout per year.

At Burlington, a small jar hatchery has been completed and was used for hatching pike-perch. In addition, four new pools capable of rearing about 18,000 yearling trout have been added to the Burlington trout rearing complex.

At Kensington, new water sources have been tapped that add substantially to the normal flow. Four new raceways capable of rearing 12,000 yearling trout and four smaller raceways capable of rearing 15,000 fingerling trout have been added. An addition to the garage was finished, an office added and flush toilets for the convenience of visitors were installed.

Developmental work in the field consisted mainly of the construction of access areas to lakes and ponds. These access areas usually consist of a graveled entrance road, a car parking lot, boat launching ramp and boat tie-up, and have been very popular. Several developed last year required enlarging this year and ten new ones were added.

In addition, there must be—

### Game to Hunt

Habitat improvement work in the Game Program again showed an expanded effort during the past year. This occurred in spite of the fact that the pheasant stocking program was materially increased to keep pace with the hunting pressures being exerted by Connecticut sportsmen on the decreasing amount of public hunting land available. More efficient techniques for raising pheasants brought the unit cost of each bird to \$1.83, which made it possible to stock approximately 700 more adult birds at an increased expenditure of only approximately \$2,000. This very favorable unit cost of pheasants was materially influenced by the Osborn Prison Farm program which raised 5,898 top-quality birds at a relatively low cost. The practice of releasing adult pheasants during the closed season, for breeding and natural reproduction, was continued, with 2,295 birds being released in selective covers throughout the state. A total of 35,638 pheasants was stocked during the period covered by this report.

The number of sportsmen's clubs participating in cooperative game projects remained about the same as in the previous year; a slight decrease in pheasant program cooperation was offset by increased participation in waterfowl development projects. However, the number of non-sportsmen groups such as schools, conservation groups, scouts, garden clubs, etc., cooperating in wildlife improvement programs again increased in number as a direct result, it is believed, of the conservation education program of the Board.

The third year of the mallard raising program saw increases in the number of birds raised and liberated. This was due to an early spring start in egg production. A total of 1,781 six-week-old mallards was liberated during May and June in natural and artificial marshes of the state as part of the program to establish the mallard duck in Connecticut as a naturally reproducing waterfowl species.

The field functions of the Department and the law enforcement effort required to protect Connecticut's wildlife resource requires services of the—

### Man with the Badge

The state is divided into four conservation districts, each under a district supervisor, and each district has a complement of six Conservation Officers, one fishery biologist, and one game biologist. Thus, each conservation district is manned with trained personnel to carry on the varied activities that arise in the field.

This field force is responsible for the enforcement of all laws and regulations relating to fish and game. Time spent on law enforcement for the fiscal year was approximately 32% as compared to 30% for the previous year. There were 348 arrests made by Conservation Officers with 334 convictions (96%). Official warnings for the year made by our officers totaled 787. (For purposes of comparison, during 1955-56 our men made 330 arrests with 309 convictions [94%], and 662 warnings were issued.)

In addition to the arrests and warnings made by our officers, 70 arrests were made by other enforcement officers. The special constables appointed by towns to help in the enforcement of fish and game laws made nine of these arrests and also issued 47 warnings. Volunteer constables now number 279.

During the year, the Department investigated the killing of 259 deer with the cause of death assigned as follows: motor vehicle, 164; gunshot, 60; dogs, nine; drowned, three; train, one; found with injuries necessitating disposal, three; and miscellaneous and unknown, 19.

There were no fatal hunting accidents; however, seven persons were injured in hunting accidents and five persons died by drowning while fishing.

All members of the field force attended a course of instruction in rescue techniques given by the office of Civil Defense; these men and their equipment will be available as a unit for use in an emergency.

Legislative authorization has been granted to install a statewide radio-telephone communication system for the use of the Department, and plans are progressing to have this long-sought-for service operating. This system will provide better protection of our natural resources, increase the efficiency and economy of patrol, provide better direction and supervision of personnel, enable the Department to give better service to the public, and make the men and equipment of the Department quickly available in the event of an emergency or disaster. All the foregoing, however, comes about only by legislative mandate formulated in the—

### **Legislative Year**

Confidence of the people in the activities of the Board of Fisheries and Game was expressed by the successful legislative year experienced. Regulatory powers of the Board were extended and practically all bills introduced by the Board were passed. The two important bills not passed were referred to the Legislative Council for study and report; these bills provided for opening water supply reservoirs for controlled fishing and requiring that impounded bodies of water built and maintained at expense of the state be open to public use. The only unfortunate situation that developed in the legislative year was reshuffling of the Special Fund budget which will necessitate reduction of departmental effort in land improvement work. It is a common misunderstanding that appropriations made to an item in the Special Fund is a net gain, while in reality a gain in one item necessitates a reduction in another because of the fixed nature of the Special Fund.



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**BOARD OF  
FISHERIES AND GAME**

APR 19 1960

**LYLE M. THORPE**

*Director*

HARTFORD

*Deputy administrator*—Thomas E. Rose, Assistant Director

*Established*—1866. *Statutory authority*—Chapter 246, General Statutes

*Central Office*—2 Wethersfield Avenue, Hartford, Tel. Jackson 7-6341

*Average number of full-time employees*—88

*Expenditures 1957-1958*—Recurring operating expenditures, \$828,904.76;  
Capital outlay, \$44,994.28

*Organization structure*—Six divisions: Administration, Fish, Game, Law Enforcement, Education and Information, Land Acquisition.



FOR THE PAST four years this agency has pursued a program which, in all its essential details, follows the recommendations of the O'Brien Investigating Committee of 1952. This report is an account of progress made along lines thus laid down, together with mention of certain problems which warrant attention.

Our modest conservation education program is bearing fruit and people are more aware of the economic, recreational and aesthetic values of their wildlife. There appears to be better coverage of wildlife conservation items by various organizations such as service clubs, garden clubs and Audubon

groups. This increasing awareness of the need to keep wildlife by persons and groups who primarily are not sportsmen interested in hunting and fishing is a healthy sign. There seems to be a general change in attitude toward violations of the fish and game laws which shows up in more severe punishment meted out by the courts. School systems are tending to place greater emphasis on resource conservation in their curricula.

Published materials are the major media used in the education program. These include the bi-monthly *Connecticut Wildlife Conservation Bulletin*, circulation of which has stabilized at approximately 7,000 per issue; the weekly fishing advisory, sent to about 500 persons, mostly newsmen, and widely used; and many informational leaflets for both juveniles and adults that are sent out on request. The 13-week television series "This Is Your Connecticut Wildlife," was well received and had good statewide coverage. A library of conservation and wildlife films is experiencing increasing use and now includes 12 titles; a number of slide programs with accompanying scripts for lecture use have been prepared and are widely used.

The Education Division administers the Hunter Safety Program which, by law, must be operated with volunteer instructors. It has been successful with approximately 400 certified instructors involved. In the two years that the program has been in operation, over 4,000 new hunters have been given the required four-hour course and have received certificates authorizing them to have hunting licenses. In addition, there has been an active program of assisting Boy Scouts and similar groups in conservation practices; giving lectures to schools and civic organizations; cooperating with other agencies in planning

outdoor programs; participating in conservation workshops, and preparing exhibits for the Eastern States Exposition and other fairs.

### A PLACE IN THE SUN

This agency has been pushing an acquisition program which is designed to supplement the existing state holdings by acquiring permanent leases on important trout streams; access points to lakes, ponds, large rivers and the tidal areas; and sizable marshes, particularly in the tidal regions.

Most of the available waterfront in this state has been developed and riparian owners, quite naturally, would prefer to restrict the use of the waters to themselves, even though these waters may legally be public domain. We have tried to acquire access sites in locations where it seemed annoyance to other owners would be minimum, but there are few waterfront sites left in Connecticut which can be acquired for public use where there is not opposition from some people. We believe this program is in the broad public interest and has widespread approval. Fishing and boating are fast-growing recreational outlets for our people. There are over 108,000 licensed adult anglers (and probably as many more unlicensed juveniles and landowners) and estimates, which are probably conservative, place the number of salt water anglers (not licensed) at over 90,000. A national survey has estimated that there are 100,000 outboard motors in this state. This figure is probably ultra-conservative because it is based upon national averages. However, it must be clear that fishing and boating are not only important as recreational outlets, but constitute a stimulation to business of many millions per year. We believe state policy should favor continuation of this program of providing public access sites to the important water areas.

There are numerous impoundments in this state which are no longer needed by industry, which created them and which are now regarded as liabilities by their owners. These areas have taken on great value for recreation and the shorefront property is important to the local grand lists. We believe that the state must take over the responsibility for keeping many of these impoundments in the public domain and our acquisition program encompasses this objective.

For a great many years, a popular misconception has existed that marshlands are wastelands, chiefly important to a few duck hunters, and probably better used for dumps or filled to create more dry land for an expanding population. This is one of the dangerous superficialities of our times. These lowlands are, to be sure, the heartland for much of our wildlife, but their benefits go far beyond wildlife and into practical economics of interest to all citizens. Hurricanes brought increased awareness that tidal marshes are important protective buffer areas between the ocean and the works of man; floods taught us how marshes can reduce the destructive peak levels of streams; experts tell us that marshes are important in recharging ground water supplies. Now the knowledge, once the non-publicized findings of a few marine biologists that tidal marshes are vital to the production of the marine resources, is being discussed in all coastal state and federal wildlife conservation agencies. Shellfish producers, commercial fishing interests, sportsmen's and conservationists' organizations are turning to the problem of preserving the remnants of the tidal marshes.

Connecticut, as well as the other coastal states, has destroyed its marshes with profligate unconcern in the name of progress, mosquito control, trash disposal, community beautification and increasing the grand list. We once had about 36.5 square miles of tidal marsh; now the area is reduced to about 20 square miles, much of it badly damaged, and this remnant has been destroyed at the rate of at least a half square mile per year for the past four years. We need help in this

matter and we believe this discussion of the marsh problem is one of the most important items in this report.

#### ACCESS POINTS

During this year, public access points have been acquired on Gorton's Pond, Old Lyme; Long Island Sound, Groton; Patagansett Lake, East Lyme; the Niantic River, Waterford; Cedar Lake, Chester. Two acres, constituting an important access to the Salmon River near Comstock Bridge, 1,235 bank feet of Bible Rock Creek, Haddam, and 12 parcels of tidal marsh, and associated upland, totaling 184 acres were brought into state ownership.

At the end of the year, negotiations were completed and funds allocated for the following acquisitions: public access points to Blackhall River, the Sound at Milford, Lake of Isles, Ball Pond; complete control, together with adequate public access to Wyassup Lake, Pickerel Lake and the Tankerhoosen Lakes; flowage rights on Quaddick Reservoir; one 81-acre parcel of inland marsh; permanent easements on 2,400 bank feet of the Natchaug River which ties in with existing state holdings; and a six-acre parcel of land needed for expansion of trout rearing facilities at the Windsor Locks Hatchery. These items are not technically in state ownership, but have reached such an advanced stage toward that end that we felt justified in listing them.

Expenditures for acquisition during this period were \$104,415, of which \$72,155 came from the General Fund and \$32,260 came from special taxes on sportsmen. Our policy has been to use General Fund financing for lands or waters of general recreational value and to use these special tax funds for purchases of areas of particular benefit to sportsmen, such as trout streams.

#### FISHING IS FOR FUN

The fresh water fishery program is acquiring a breadth and balance which convinces us that this state can continue to provide its citizens with acceptable recreational fishing for the future. The production of trout in our hatcheries has been increased without significant increase in overhead. In this connection, it is interesting to note that in the past four years, our cost of producing trout, as indicated by accurate and complete cost accounting, has been cut in half and this year stands at just under \$1 per pound. We have exploited all of the major opportunities for efficiencies and, therefore, expect only minor reduction in unit cost in the future. The increased production of trout, coupled with increased purchases on the open market, resulted in the largest liberation of trout recorded in any year as is shown below.

#### TOTAL TROUT PLANTED JULY 1, 1957—JUNE 30, 1958

	NO. OF TROUT	POUNDS
Brook Trout Adults	126,609	33,213
Brown Trout Adults	233,080	98,755
Rainbow Trout Adults	47,673	12,661
<b>TOTAL ADULTS</b>	<b>407,362</b>	<b>144,629</b>
Brook Trout Fry and Fingerlings	43,800	313
Brown Trout Fry and Fingerlings	65,000	256
Rainbow Trout Fry and Fingerlings	44,200	113
<b>TOTAL FRY AND FINGERLINGS</b>	<b>153,000</b>	<b>682</b>

About one-third of the adult trout were stocked in 62 lakes and ponds, and the remainder in 284 streams.

The program of selling surplus fall fingerlings at cost to small pond owners is increasingly popular and is helping rural landowners enjoy some excellent back-

yard fishing. This year, 47,502 fingerling trout were sold to 161 pond owners, for which the state recovered \$2,375.10. This represents about a 40% increase in the number of people taking advantage of the program.

The Federal Aid to Fisheries Act assisted the fishery program by about \$44,000 in this fiscal period. These funds, which are derived from the excise tax on certain items of sport fishing equipment, are restricted to participation in specific types of fishery work, such as acquisition and development, research and habitat improvement. Under the formula, the state must finance the entire cost of approved projects and may then recover 75% of the cost. These federal funds make possible a balanced fishery program.

This year federal aid funds were used to help finance the development or improvement to public access points on 14 lakes and ponds; a large parking lot and boat launching area on the Niantic River; the reclamation of seven lakes and ponds for trout, and one lake for a more productive combination of warm-water species; control of obnoxious aquatic weeds in 13 lakes; acquisition of a public access site on Cedar Lake, Chester; research on striped bass and sea-run trout; purchase, transportation, hatching and stocking of pike-perch for Lake Lillinonah. The latter program, now in its third year, put ten million pike-perch fry in the lake and fishermen now report taking fish from seven to 17 inches long—obviously the result of the first and second years' plants.

The striped bass study, being conducted concurrently with similar work in the other coastal bass states, is progressing satisfactorily. Evidence is accumulating that most of our stripers are identified with the Hudson River stock rather than the Chesapeake Bay population, and thus New York and Connecticut, working together, have the opportunity to practice sound management of this important species. So far, there is no evidence that there is any significant amount of natural reproduction of striped bass in our waters.

### CONNECTICUT SHAD

The 1957 commercial shad catch was reported to be 81,812 fish. In recent years, most of the Connecticut catch is boned and goes to our retail market where it has an average value of \$1.50 per fish. On this basis, the commercial catch was worth about \$123,000. The phenomenal sport fishery for shad continues to grow as more people learn about it and more spots where shad can be caught are discovered.

In 1957, biologists of the U. S. Fish and Wildlife Service initiated a survey designed to estimate the magnitude and rate of expansion of the sport fishery for shad in the Connecticut River and its major tributaries. The survey revealed that 12,248 Connecticut fishermen took 25,298 shad. In 1958, the number of anglers increased to 15,361 and the take of shad to 27,480. These catch figures are deceptive in evaluating the amount of recreation provided, because, while anglers catch and release many fish, the six-per-day limit restricts the take-home catch.

The Connecticut shad run, we believe, is jeopardized by a proposed dam at Windsor Locks. In trying to balance the benefits of this dam against the value of this resource, we used figures compiled by the Crossley S-D Surveys, Incorporated, for money spent on fishing trips by fishermen. These figures were applied to the 1958 shad angling survey data to arrive at the amount of business stimulated by the shad sport fishery. To this was added the fair food value of the shad taken by angling and the retail value of the commercial catch based on an average commercial catch of 100,000 fish per season. If this annual yield from the fishery is capitalized at 4%, the value of the Connecticut River shad run to this state is \$6,554,700—an asset well worth preserving.

Competent state and federal biologists have predicted that the construction and operation of the Enfield Rapids Dam as proposed will deplete the shad run by at least 50% and, more probably, by 75% and that the sport fishery will be almost totally eliminated. These considerations have led the Board to oppose the building of the dam.

For some time, we have been experimenting with sea-run trout in an effort to build up larger populations of these superb sporting fish in certain tidal estuaries and their inlet-streams. Our present sea-run trout are not a distinct race of anadromous fish, being strays or escapees, or the progeny of such fish stocked in the inlet streams. We have been able to secure eggs from truly anadromous brown trout from river systems in England, Scotland, Denmark and Sweden. The eggs were hatched in our Burlington Hatchery and the young are being reared for stocking as one- and two-year olds in the lower reaches of our sea-run trout streams. This project shows considerable promise of adding more sport fishing to the state.

### HUNTING IS MORE THAN SHOOTING

The problem of providing public hunting in this state is difficult because of a combination of factors: The "urban sprawl" has created a class of rural landowners who have different attitudes toward sportsmen and hunting trespassers than did their farming predecessors. The acreage available for hunting is shrinking as each new home, highway and business enterprise is built in the country, and changing land use is further reducing the wildlife productivity of much of the land available for hunting. But perhaps the most perplexing problems have their roots in the apparent inability of many Connecticut gunners to adjust themselves to the realities of the game-producing potential of our covers, the attitudes of rural landowners and the economic limitations of stocking for the gun. Hunting is basically more incompatible with high population densities than is fishing and the behavior of some nimrods afield, particularly in pheasant hunting, violates the reasonable rights of property owners, and causes frictions and posting against trespass. Connecticut never had much good pheasant-producing habitat and the amount and quality of the pheasant cover shrinks each year. Yet there are many hunters who have the "pheasant fixation" and overlook good hunting opportunities for native species. Traditionally, this was a partridge, woodcock, rabbit, squirrel, fox, raccoon and waterfowl hunting state. It still is, and our gunners must rediscover that fact if they are to enjoy the gunning which this state can provide for the future.

The program which we have been following is designed to make the state more productive of native small game. Our biologists work with the Soil Conservation Service to promote better game management on farms and we furnish the game food plants which the Soil Conservation Service farm plans recommend. This year, 250,000 trees and shrubs were provided free for increasing wildlife capacity to landowners through the Soil Conservation Service, sportsmen's clubs and our department.

Much of the state forest land is in types and age classes of trees which makes for low production of small game and this condition must be corrected if the full recreational potential of these state-owned lands is to be realized. There is a continuing program to make the state forests more productive of native wildlife and this habitat improvement work has been closely coordinated with the forestry program. About \$25,000 was funneled into the forest work crews this year for game work, which improved conditions for grouse, deer, rabbits and woodcock on about 6,000 acres of state woodland. Channeling our funds to the

park and forest labor also had the collateral benefits of providing water holes and roads for forest fire fighting, and helped to stabilize the work crews.

Every effort is being made to build up native waterfowl populations. Two sizable waterfowl impoundments, one in the Pachaug State Forest, the other in Nipmuck, were completed, and a third in the Natchaug State Forest is well under way. A marsh improvement technique of benefit to waterfowl and furbearers known as level ditching, has been developed for areas where the water table is high. These blind ditches, approximately 12 feet wide and five feet deep, are dug in a zig-zag pattern with power equipment. This type of improvement is applicable to the farm areas because it provides a ready source of irrigation water which can be exploited with little detrimental effect to wildlife. This year, 6,110 feet of such ditching were created, and since the program was started four years ago about 7.75 miles of such ditches have been completed. The woodduck nesting box program, directed by this department, has been adopted by many clubs and individuals, and is increasing the numbers of woodduck. The state has built and emplaced 1,171 nesting boxes, and private efforts have probably placed 600 more in the field. Our studies indicated this program put at least 3,800 woodduck on the wing in the fall of 1957.

The mallard rearing program, which is designed to provide a seed stock of this species in suitable sites throughout the state, is proceeding successfully. In 1957, 1,800 young birds (approximately six weeks old) were produced and liberated in selected areas and the 1958 production should be about the same number. The mallard was not a native nesting species in this state, but indications are that this program of habitat improvement and seed stock planting is bearing fruit. We believe the mallard can be made to compensate, in some measure, for the seemingly inevitable decline in pheasant shooting.

The game program has stabilized the pheasant stocking at a level which leaves some funds for work with native species. This year 22,844 pheasants were purchased on the open market and liberated. In addition, we paid the State Prison Farm at Enfield for 5,725 birds which were of excellent quality. The cooperative rearing program with sportsmen's clubs produced an additional 8,246 birds so that 36,815 pheasants were liberated.

The new deer law passed by the last General Assembly opened the state lands to bow hunting for deer for a period of one week at a special fee of \$5.35 in addition to the basic hunting license. Only 663 persons were licensed under this law and they killed 13 deer. The small number of archers who took advantage of this law is probably an indication that the fee is too high for the opportunity offered; neighboring states are much more generous in their archery laws and thus attract our bow hunters. The experience gained should result in more liberal legislation in the future.

Modern wildlife administration is beset with problems generated by the programs of other state and federal agencies. There is constant need to study federal legislation, programs and projects so that attempts may be made to minimize damage to wildlife or, in some cases, to gain important benefits. There is, in general, an increasing awareness of the importance of the wildlife resources and this is reflected in state and federal laws and in the policies of governmental agencies which take cognizance of wildlife values. The demands put upon our limited technical staff by this planning and coordination work is great, but we believe our persistence in these matters has paid dividends.

#### THE MAN IN THE FIELD

The Division of Law Enforcement and Field Services is composed of 36 men

divided into four conservation district organizations. Each district has one supervisor, one fishery biologist, one game biologist and six conservation officers. This force of men has all of the necessary skills within itself to carry out the field program of the Department and to bring its services to the people. This field force is closely coordinated with the central staff through regular monthly meetings of the supervisors, special meetings, to instruct the biologists in new techniques, to acquaint the conservation officers with policies and procedures, and to provide special instructional and reference material. The result is a closely knit and well-informed field force which acts as an extension of the central organization in dealing with the public, carrying on and supervising various development and habitat improvement work, and enforcing the fish and game laws and regulations.

These men have been given formal advanced first aid training as well as the Civil Defense course in rescue techniques, which enables them to effectively help accident victims. Under the recently approved Survival Plan, Civil Defense has assigned this agency the basic responsibility for organization, training and operation of the statewide Rescue Service; much of this work will fall to the field force, and it is contemplated that a formal training course in rescue work and techniques will be necessary. The field force will soon be equipped with mobile radios and we feel these men then will be most valuable in time of public emergency as well as more efficient in their primary duties.

The 1957 General Assembly increased the amount of money budgeted for trout and pheasant purchases over our requests. This did not increase the special fund accounts, from which such stocking must be financed, but merely rearranged the fish and game dollars into a different spending pattern. The effect was to reduce the amount which we had planned to use for matching funds in order to take advantage of the federal aid acts and thus there was created a situation which threatened to cost us part of these funds through reversion. In order to prevent this loss, we used a great deal of the time of the field force on federal aid projects, charging their time and transportation against the projects as our contribution in lieu of dollars. This resulted in decreased time spent on straight enforcement work and a decreased number of arrests.

In January, an extensive fish kill occurred at the Windsor Locks Hatchery which a thorough investigation proved was caused by the negligent pollution of the feeder stream by waste from a ready-mix cement plant. The responsible company made full payment of our claim for \$7,817.76. During the year, the killing of 297 deer was investigated and the causes of death were determined as follows: motor vehicle, 182; gunshot wounds, 43; dogs, 36; drowning, three; train, one; unknown, 26; miscellaneous accidents, six.

There was one fatal hunting accident which occurred in Harwinton. Eight persons were injured in hunting accidents and one person drowned while fishing.

The last General Assembly passed a lobster law which is probably close to a model for such legislation and this law becomes effective on January 1, 1959. The lobster industry is in a depressed state, primarily as the result of over-fishing. The law now in effect permits taking lobsters too young and, in addition, there is a heavy traffic in short lobsters because the present law is largely unenforceable. We believe the new law, if properly enforced, will restore the lobster industry, but two new enforcement men, properly equipped and assigned, will be needed.



9-30 p.2  
**Board of Fisheries and Game**

LYLE M. THORPE  
*Director*



CONNECTICUT  
STATE LIBRARY

APR 19 1960

HARTFORD  
CONNECTICUT  
*Deputy administrator*—Thomas E. Rose, Assistant Director

*Established*—1866. *Statutory authority*—Chapter 490,  
General Statutes

*Central Office*—2 Wethersfield Avenue, Hartford, Tel. JACKSON 7-6341

*Average number of full-time employees*—88

*Expenditures 1958-59*—Recurring operating expenditures, \$873,227.29;  
Capital outlay, \$110,075.98

*Organization structure*—Six divisions: Administration, Fish, Game, Law  
Enforcement, Education and Information, Land Acquisition.

IT IS THE FUNCTION of this agency to manage the wildlife resources of the State to provide the greatest benefits, recreational, aesthetic and economic, to the greatest number of its residents, present and future. Its activities are governed by a policy-making five-man citizen board whose membership includes Rudy Frank, chairman, Bridgeport; John S. Purtill, vice chairman, Glastonbury; Patrick J. Ward, Hartford; George F. Flavell, Manchester; and Michael J. Stula, Colchester.

Historically, the resource agencies of Connecticut have worked together cooperatively and in many instances their programs have been well integrated. The administrative and citizen boards of the agencies have in the past met and planned together to effect the integration of programs for the purpose of providing the best service to the people of our state.

Public Act No. 637, passed by the 1959 General Assembly, formalizes the bringing together of resource agencies into a single budgeted agency and is designed to ameliorate the services which they collectively render.

For the purpose of carrying out the field program of the Department and to bring its services to the people of the state, the Division of Law Enforcement and Field Services, presently numbering 35 men, is divided into four conservation district organizations. Each district has a normal complement of one district supervisor, one fishery biologist, one game biologist, and six conservation officers. By open, competitive examination, a former conservation officer, formally educated in fisheries and wildlife, was promoted to the position of district game biologist. This resulted in a conservation officer vacancy which has not as yet been filled. This field organization enforces the laws and regulations pertaining to hunting, fishing and trapping. During the past fiscal year, 178 arrests were made, of which 173 or 97% resulted in convictions, offering proof of the judgment employed by these men in making arrests and the care taken in preparing cases for prosecution. Official warnings totaled 567.

Volunteer fish and game constables made nine arrests and issued 28 warnings. Public Act No. 150, passed in the 1959 General Assembly, provides for the appointment of volunteer constables for fish and game protection by the chief executive authority of any municipality. Such constables will have power of arrest only in the town from which appointed, and will cooperate with personnel of the Board of Fisheries and Game. It is the objective of this division to enforce fish and game laws and regulations as efficiently as possible, not only by making arrests, but also by gaining the wholehearted approval and cooperation of the sportsmen, landowners and the public in general. To accomplish this, we have stepped up our educational and public relations programs and continue to bear in mind that premeditated, intentional violations are the target of our enforcement efforts.

In addition to the important duties of law enforcement, many other activities are performed by our field force. These include liberation of birds, game management and development projects, stocking fish, trout management and development projects, leasing and posting of land for hunting and fishing purposes, assistance in land acquisition and development of access areas, advising relative to pond management and wildlife damage to property, and patrol of woodlands during periods of high forest fire danger.

Five persons were injured in hunting accidents last year, none fatally. Three drownings occurred while fishing and one person drowned while checking traps from a boat. The killings of 288 deer were investigated and the causes of death determined as follows: motor vehicle, 200; gunshot wounds, 40; dogs, 17; drowning, five; miscellaneous accidents, eight; unknown, 18.

Our long-sought radio communications system was installed and put into operation in the latter part of December, 1958. Forty mobile units and a console at the Hartford office are presently in operation. This communications system provides better protection of our wildlife resource, increases the efficiency and economy of patrol, provides better direction and supervision of personnel and enables the Department to better serve the general public.

### **That the Public be Informed**

As in past years, the activities of the Education and Information Division have been directed toward three goals: (1) informing the people of Connecticut of the methods employed in managing their wildlife resource to provide the greatest benefit for the greatest number of citizens; (2) attempting to explain the reasons governing these management techniques. (The Department is well aware that no program which it undertakes can be truly successful without public understanding and acceptance); (3) developing a "conservation consciousness" within the people of the state, with considerable of the effort in this line directed toward youth. The principal means of achieving these goals has been the preparation and dissemination of printed materials to the press, radio and television stations, schools, libraries, sportsmen's groups, conservation clubs and individuals. These materials have included the bi-monthly publication, the "Connecticut Wildlife Conservation Bulletin," whose present circulation is approximately 7,000; weekly news releases of departmental activities and items of interest; the weekly fishing advisory; miscellaneous educational materials regarding wildlife and its conservation. Requests for such literature numbered some 5,000 during the year. Other methods employed have been the preparation of short films for television use; encouraging and assisting such groups as Boy Scouts, Girl Scouts, 4-H, conservation and sportsmen's clubs in the carrying out of various wildlife habitat improvement projects (the recent

preparation of a listing of such projects, their purpose and work involved, has helped speed up this effort); having available for free loan such materials as films from our 14-title library, sets of books on wildlife directed at various age levels, electrically operated, illuminated conservation charts, recordings, slide series, etc.; the preparation of exhibits for various functions, including the Eastern States Exposition; providing speakers for school assemblies, sportsmen's groups and civic organizations.

This division is also charged with the supervision of the statewide Hunter Safety Program. The present force of volunteer instructors numbers approximately 425. Approximately 3,800 students received instruction and certificates of competency during the past year.

An in-service training program for departmental personnel has been inaugurated. One of the prime purposes of this program is to secure better understanding of the whys and hows of the Department's activities among all of its members.

### A Means to Approach

The land acquisition program for the past fiscal year continues the Department's policy of providing access to lakes, ponds, streams, tidal areas and purchasing large marshes, particularly in the tidal regions. Scarcity of waterfront properties and tidal marshes creates a competitive market with higher and higher prices. Limited funds prevent an all-out program to provide the tremendous amount of land and water needed to provide ample public access and recreation. The General Assembly, recognizing this problem, has appropriated \$130,000 for land acquisition and improvements during the next biennium. During 1958-59, public access points have been acquired on Lake Lillinonah, Bridgewater; Anderson Pond, North Stonington; and Waumgumbaug Lake, Coventry. Forty-eight acres of upland hunting area and access to Little River in Hampton, two parcels of tidal marsh and associated upland, totaling nine acres at Plum Bank, Old Saybrook, and 13 acres of inland marsh and associated upland at Durham Meadows, Durham, were also purchased. By the end of the year, negotiations had been completed and funds allocated for the following acquisitions: 13 acres of salt marsh and associated upland at Plum Bank, Old Saybrook, and a parking area for Higganum Reservoir, Haddam. Expenditures for acquisition during this period were \$20,750 of which \$18,700 came from the general fund and \$2,050 from special funds. These expenditures exhausted the appropriated special funds which totaled \$36,000 for the biennium and nearly liquidated the \$100,000 Bond Fund allocation for the biennium.

### Fish for the Creel

In this small, heavily populated state, it is imperative that every body of water be made to produce and contribute to its fullest potential. A sound fisheries program, based on research, management and stocking, can provide the maximum amount of recreational fishing for present and future generations of anglers. Research is necessary to determine the measures that must be taken to realize the potential production of various bodies of water. Management puts into practice the measures that make it possible to produce and utilize more of each water's potential. Stocking has its place in providing trout fishing and occasionally in introducing a desirable warm-water species where it is not already present.

The striped bass study was completed satisfactorily on June 30. Biologists were unable to find any concrete evidence that the striper spawns in Con-

necticut waters. Several years of tagging studies indicate that our stripers are migrants from the Hudson River, Chesapeake Bay and Delaware River. The Hudson River strain comprises the greatest percentage of the fish found in our waters, particularly in those waters from the Connecticut River west to Greenwich. The sea-run brown trout investigation has been continued. Many European authorities consider this species as being equal in sporting qualities to the Atlantic salmon. Most of the research on this species has been confined to Latimer's Brook, East Lyme; Eight Mile River, Lyme; and the Saugatuck River, Westport. Every effort is being made to increase the runs of sea-trout in these rivers. If the runs can be increased in these rivers, then similar methods can be used to establish or increase the runs of sea-trout in all other suitable rivers. In 1957 and 1958, eggs from truly sea-run fish were obtained from Scotland, England, Denmark and Sweden. During the late spring of 1959, 6,488 yearling sea-trout from these European eggs were stocked in Latimer's Brook and the Eight Mile River. A careful check will be made of these streams periodically to determine whether these fish will add materially to our populations of sea-run brown trout. Several thousand of these European fish will be held in our hatcheries for another year. It is hoped that these fish will silver up and reach the migratory, or smolt stage before they are stocked in the spring of 1960.

Biologists of the U.S. Fish and Wildlife Service estimated that in the spring of 1959, 16,800 anglers fishing in our portion of the Connecticut River took more than 33,000 shad. This extremely valuable sport fishery is becoming more popular each year and creel census data indicate that in the past year there has been an increase of nearly 10% in the number of anglers taking advantage of this superb sport. The estimated sport catch represents only the fish killed; probably another 12,000 fish were taken and released.

#### Best Seller

In the spring of 1959, "A Fishery Survey of the Lakes and Ponds of Connecticut" was published and made available to the public. A total of 10,000 copies of this publication were distributed within a period of one month. The report covered most of the public ponds in the state, but since fish populations are dynamic and constantly changing, frequent biological surveys of individual problem ponds are necessary. Each year biologists recheck the fish populations in 20 or more ponds to enable them to keep track of major shifts in biological balance.

As a result of past investigation, the largemouth and smallmouth bass season was extended from the former July 1 through October 31 period to the present third Saturday in April through last Sunday in February. All available evidence indicates that these species have not been over-harvested with the extended season. Three warm-water ponds were reclaimed in the fall of 1958 and have been restocked with suitable warm-water species. Past research indicated that these ponds were badly out of balance and were not producing up to their potential. One small trout pond was reclaimed in the fall of 1958 to eliminate competition from other less desirable warm-water fish. Weed control work was somewhat curtailed during 1959. This management tool was used to remove weeds in all or parts of three ponds where this aquatic nuisance had reached such proportions that it seriously hindered fishing and boating. Two new fresh-water access areas and one marine access area were developed during the year. These developmental projects provide public access to 175 acres of fresh water and to Long Island Sound. In addition, improvements and

expansion of existing facilities were undertaken on two lake access areas and one marine access area.

Again, the production of trout in our hatcheries has been increased without a significant increase in overhead. Greater use of new and improved trout foods has made it possible to raise a greater poundage of fish without an increase in the total cost of food. The expanded production of trout from our hatcheries, plus continued large purchase of trout on the open market, resulted in the largest trout liberation ever recorded in Connecticut.

TOTAL TROUT PLANTED JULY 1, 1958—JUNE 30, 1959

	<i>No. of Trout</i>	<i>Pounds</i>
Brook trout adults	158,039	36,622
Brown trout adults	248,275	102,493
Rainbow trout adults	43,535	19,016
Total adults	499,849	158,131
Brook trout fry and fingerlings	31,500	171
Brown trout fry and fingerlings	62,200	179
Rainbow trout fry and fingerlings	72,000	1,602
Total fry and fingerlings	165,700	1,952
Total of all trout planted	615,549	160,083

Approximately one-third of the adult trout were stocked in 62 lakes and ponds and the remainder in 312 streams or sections of streams. Most of the fry and fingerlings were stocked in reclaimed ponds and lakes. In accordance with the recommendations set forth in the Wononskopomuc Lake Creel Census (published in 1957), lakes containing warm-water species and stocked with adult trout were stocked with a mixed plant of 75% brown trout and 25% rainbow trout. During the past season, the department sold 50,425 surplus fingerling brook trout, brown trout and rainbow trout to 199 owners of small, private ponds. These sales returned \$2,521.25 to the Fish Fund and represent an increase of more than 23% in the number of pond owners participating in this program.

Two bills were passed in the 1959 General Assembly which benefit our fishery resources. Public Act No. 29 classifies the striped bass as strictly a game fish in Connecticut by prohibiting the sale or exchange of stripers taken in the state. Public Act No. 27 amended the lobster law to remove certain objectionable features.

### Game and the Man with the Land

The present and future status of public hunting in Connecticut is dependent upon one man—the farmer and rural landowner; the “man with the land.” Over 95% of the land in this state is privately owned. It is therefore the policy of this Department to, in every way possible, see to it that no action is taken, either by sportsmen or by ourselves, which might encourage him to close this land to hunting, and at the same time, to take positive action to gain his friendship and understanding. The problem, however, is intensified as it becomes increasingly evident that our open spaces are dwindling rapidly, especially in New Haven, Fairfield, and Hartford counties. In view of the widespread interest in natural resources and outdoor recreation, including hunting, this Department is prepared to assist those agencies charged with town, community and regional planning. We realize the Urban Renewal Program can have a far-reaching effect upon our wildlife resources and we are ready to give aids and programs to those planning agencies responsible for carrying out this program.

Under the Federal Aid Soil Bank Program, croplands are taken out of production and planted to permanent grass, evergreen trees, food shrubs, and grains specifically for wildlife. Connecticut's program is not large; however, much of the 3,800 acres already signed up is proving of considerable value to our small game populations as nesting and rearing grounds unmolested by farm activities.

A statewide pheasant cover survey was completed during the summer of 1958. This survey revealed a number of factors relating to hunting grounds. The Department has at its disposal approximately 320,000 acres of pheasant cover open to public hunting. The regulated shooting and state-leased shooting ground programs provide 125,000 acres. Another 195,000 acres are open through the kindness of landowners who do not post their lands. These lands are stocked annually by the Department and cooperating clubs at the rate of one pheasant per each nine acres. Suitable pheasant covers closed to hunting by landowners amounts to over 300,000 acres. Much of this closed land is in the eastern half of the state. It would be of considerable value to the Department if we had more sportsmen's groups in the eastern part of the state so that this land might be opened to gunning.

The following work was completed by field biologists in the wildlife development program:

Farm Game: 156 acres planted to trees and shrubs; 144 acres of food and cover plants released; 44 acres of grain plants.

Forest Game: 26 acres of openings cleared, fertilized and planted to herbaceous cover; 44 acres of woodland thinned and food and cover plants released.

Waterfowl: Three Marshes totaling 70 acres; 11,100 feet of level ditching; 17 acres of noxious aquatic vegetation controlled; four acres of waterfowl food planted; 49 new wood duck nesting boxes; 915 wood duck nesting boxes maintained.

A considerable amount of work has been done in the Pelton's Pasture field trial area during the year. A small clubhouse has been completed. The Department supplied the materials and the field trial organization the labor for construction. About 1,400 feet of roadway was rebuilt. Boundary fences are being rebuilt by adjoining landowners and a prison farm labor force. Hardwood growth has been removed from specific areas by the use of herbicides.

Our 1959 tree and shrub planting program was reduced from 1958 by about 17%. Most of the reduction occurred in the multiflora rose stock where nursery inventories had been overestimated. Twenty-seven sportsmen's clubs were provided for planting on shooting grounds, and six Soil Conservation Service Districts were provided stock for their farm plan needs.

Pheasant liberations of 40,993 for 1958-59 were down approximately 3% in number of birds liberated from the previous year. Funds for the purchase of pheasants were down 2% for the same period. Twenty-seven sportsmen's clubs continue to take part in the Department's six-weeks-old pheasant program. These clubs reared over 8,500 adult birds for release during the fall of 1959. Chinese strain pheasants obtained from a Wisconsin breeder and reared at the Prison Farm have been observed with broods this spring by some of our field personnel. A small pen at Franklin headquarters has been used to rear pheasants for field trial purposes and experimental disease studies.

Trapping permits on state-owned lands issued to the highest bidder brought \$1,330 for the permit period, November, 1958, to March, 1962. These permits involve some 70 trappers on approximately 85,000 acres of state-owned lands.

During January, 1959, seven clubs and three individuals purchased 377 snow-

shoe rabbits from a New Brunswick trapper. Most of the rabbits were released in acceptable habitat. Fewer rabbits were released this year than in 1958.

An animal shot in Canaan during November, 1958, by a sportsman was identified by a Cornell University mammologist to be a coyote. This is our first positive identification of such an animal in Connecticut. Three other similar animals taken during recent years were of questionable origin.

Connecticut's beaver populations have increased by at least 20% since January, 1958. Field data indicate that we have over 50 colonies in the northwest section of the state.

This agency's efforts to secure a game animal status for Connecticut's deer herd came one step closer to realization with the passage of Public Act No. 227 by the 1959 General Assembly. This act lengthens the bow and arrow season for the taking of deer on designated state-owned lands and on private lands with written permission to include the entire month of December. It is felt that this longer season will stimulate greater interest in the sport and provide a greater harvest of deer by sportsmen.

#### A Mission Accomplished

It should be apparent to the reader of this report that the plans put forth in the program of the Connecticut State Board of Fisheries and Game in 1954 have, as nearly as possible, reached fulfillment. Operating under the framework of these long-range plans, this agency, realizing that as the face of our state undergoes rapid change, so do the needs of its wild creatures, and realizing also that the methods of wildlife management similarly change as research uncovers hitherto unknown facts, will continue to adapt its operations to best serve the citizens of Connecticut and insure the future of their invaluable wildlife resource.

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